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COVER: The 500 was constructed by Nicholas Fasciano and photographed by Roberto Brosan.

"I think we made a gross error, which won't be repeated."

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"Being separated from my life's work is an extremely difficult step."

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"Keep your eye on the product. That was all-important to me."

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"We're fooling ourselves if we think a lower dollar is the answer to the trade deficit."

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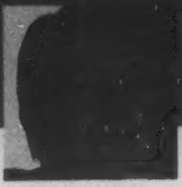

"We wouldn't *think* of copyrighting our ideas. Anyone is welcome to them."

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"If we can supply Motorola, we can supply God."

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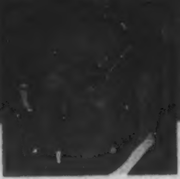

"Reward: $1,000 for information leading to the arrest and conviction of Charles Hurwitz."

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"Brady pushed the bankers and the debtors off the cliff, hoping someone will put some water in the canyon."

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"It's barbaric what you're asked to sacrifice to make the team."

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"I did what I was paid to do—get value for shareholders."

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EDITOR'S DESK

JOHN S. ABBOTT

Editor Geoffrey Colvin, front left, and the FORTUNE *500 team*

READING the hefty issue you hold in your hands is an annual rite of spring for corporate America. The FORTUNE 500 directory of the largest U.S. industrial corporations—to be followed in the June 5 issue by the directory of the 500 largest service companies—forms the centerpiece of one of the most eagerly awaited and closely read issues we print all year. For good reason. These annual rankings, the original and the most authoritative of their kind, measure the financial performance of America's industrial giants—the redwoods of the business landscape.

More than ever, the FORTUNE 500 makes fascinating reading this year. The companies on the list turned in their best performance in history. Benefiting from a strong economy and the salutary effects of continued restructuring, nearly all our 27 industry groups set new records for profitability. The total profits of the 500 rose almost 27%, to a remarkable $115 billion.

Complementing the directory is a bouquet of stories that examine the causes and implications of those handsome numbers. In the lead article Alex Taylor assesses the current state of U.S. industrial companies and finds them gaining on global competitors. Carol Loomis looks at the star corporate performers on the list over the past ten years and pinpoints the reasons for their superb records.

Next, reporting on our exclusive poll of FORTUNE 500 and Service 500 chief executives, Brian Dumaine describes the big bosses' prescriptions for outperforming foreign competitors. Then Peter Nulty writes about the smaller companies scrambling to make next year's list and uncovers a host of strategies for growth. John Paul Newport examines the great rush of dealmaking that moves companies on and off the list like poker chips, faster than ever before. And, finally, Anthony Ramirez leads you on a tour of the country's finest factories, each equipped to take on the world.

FORTUNE *Italia editor Andrea Monti*

MAURO GALLIGANI

The theme uniting this package, says Geoffrey Colvin, who nine years ago compiled the FORTUNE 500 as a reporter and this year served as the issue editor, is America's return to world industrial competitiveness. Says he: "A lot of people still don't believe this is happening, but the performance of the 500 is strong supporting evidence."

Unlike our imitators, FORTUNE has been gathering and scrutinizing this information for 34 years. Chief of reporters Evelyn Benjamin, who has overseen all of FORTUNE's lists for half those years, notes that the longevity of our directory has created a wealth of consistent historical data. Citing the directory's elegant methodology—the ranking by sales and the division by industry categories—she adds, "There is no responsible competition for these lists out there."

With its 20,000 pieces of information, the directory is the product of months of painstaking research. In January reporter Reed Abelson and Rahul Jacob began combing sales and earnings reports, news stories, and other sources for possible newcomers to the list. The task of gathering, checking, and double-checking questionnaires sent to each company takes eight weeks and often involves as many as 40 phone calls a day. At 4:30 A.M. on Easter morning Abelson and Jacob were still at their devotions, proofreading the final numbers. Says Jacob: "I felt as if I were back in graduate school cramming for exams."

How's your Italian? This spring we also hail FORTUNE *Italia*, a monthly edition of FORTUNE published in that language. More than 100,000 copies of the first issue hit newsstands from Venice to Palermo on March 30. FORTUNE *Italia* is a joint venture of Time Inc., the publisher of FORTUNE, and Italy's Arnoldo Mondadori Editore, which produces 24 other magazines, including *Panorama*, *Grazia*, *Epoca*, *Marie Claire*, and *Espansione*. A Milan-based editorial staff led by Andrea Monti, an ebullient editor full of ideas, will offer original articles and adapt others from our English-language editions.

FORTUNE *Italia* is the third member of our foreign-language family. Fourteen months ago FORTUNE *France* appeared, a joint venture with the Hachette Filipacchi group, which owns *Elle*, *Paris Match*, and *Le Nouvel Economiste*. We have published *President* magazine in Japanese in partnership with Diamond Publishing Co. since 1963. We are proud of them all—and plan to reach more people in more languages in the future.

Marshall Loeb

MANAGING EDITOR

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THE VALUES OF THE AFFLUENT

■ According to a new survey, 94% of people with household incomes topping $100,000 a year attribute their good fortune to hard work. Only one out of six cited "a willingness to cut corners or shave the truth" as an advantage in getting ahead.

This admirable dedication to labor apparently has transformed the microwave into a basic necessity for the rich. Says William Doyle, head of **Doyle Graf Raj**, the New York ad agency that sponsored the survey: "Any electronic device that saves time will have high sales." **– Wilton Woods**

THEIR HEROES

PHILIPPE HALSMAN

Einstein

LOUIS PSIHOYOS—MATRIX

Iacocca

MARY ELLEN MARK

Mother Teresa

WHAT THEY THINK THEY NEED

Microwave	57%
Home computer	42%
Financial adviser	25%
Private school for children	25%
Vacation abroad	19%
Car phone	14%
Country club	8%
Fur coat	6%

SOURCE: DOYLE GRAF RAJ/THE ROPER ORGANIZATION

them. The instructor lost no time in working on attitudes. "You are late because you left home too late," he shouted. "The responsibility is yours!" Everyone arrived on time the next day. **– Patricia Sellers**

THE BUG SUCKER

■ It's a giant vacuum cleaner. But instead of attacking grime, this one gobbles up the bugs that infest produce—and then spits them out as mulch. The contraptions go for up to $16,000 (the tractors cost extra), and sales may pick up because of tainted-food scares. "Bug Vac" technology has enabled some California strawberry and lettuce growers to cut their pesticide use over 40%.

The vacuum was the brainchild of **Driscoll Strawberry Associates**, a cooperative of growers in Watsonville, California. The company worked with Michael McCluney, an equipment maker, to produce the prototype, designed to inhale the lygus bugs that attack berries.

One of the largest independent lettuce growers, **Tanimura & Antle** of Salinas, California, then modified the design to get at the bugs and worms in lettuce. McCluney knows bug vacuums are not about to make pesticides obsolete. Says he: "It is a successful experiment, but it's still an experiment." **– J.L.**

The question is eternal: How many bugs can a bug sucker suck?

RICHARD STEVEN STREET

GORGING ON BOEING'S SCRAPS

■ Emboldened by higher profits and worried about aging fleets, U.S. airlines are ordering more new planes than **Boeing** can make. "If you wanted to order a Boeing airliner today," says Chairman Frank Shrontz, 57, "you would have to wait three years or more for delivery." As a result, says Paul Nisbet, an aerospace analyst at Prudential-Bache, "the airliner business has become a sellers' market." All the commercial-airframe manufacturers are bulking up on the business Boeing can't handle. Last month, for example, the European joint venture **Airbus Industrie** snagged a $3.6 billion order from Carl Icahn's **TWA**, which wants 40 new widebodies starting in 1994. Boeing couldn't deliver its aircraft that soon.

Another producer that is delighting in the mild new competitive climate is **Fokker Aircraft** of the Netherlands, maker of the famed Red Baron's World War I plane. **American Airlines** decided to buy $3 billion of 100-seat Fokker jets for use on its lightly traveled routes, instead of a version of the Boeing 737 that holds the same number of passengers. That comes to 75 planes now, plus an option to buy 75 more. President Reinder van Duinen says the new business nearly doubled his order book in a single stroke. None too soon: Fokker flew into trouble a couple of years ago developing its new generation of planes and has since depended on government aid to keep aloft.

McDonnell Douglas is getting its share of the bounty: **Delta** has signed up to buy more than $9 billion of its aircraft over the next decade, and last week **Midway Airlines** put in for $1.7 billion of new jetliners. But there are limits. Says Helane Becker, an airline analyst at Shearson Lehman Hutton: "If any manufacturer tried to add another production line now, its suppliers couldn't keep pace." **– W.W.**

GIVING CREDIT TO THE RETIRED

■ Already a powerhouse lobby in Washington, the **American Association of Retired Persons** may soon emerge as a leader in personal finance. A credit union AARP launched in May is breaking all records for first-year deposit growth. It has enrolled 36,000 members and gathered $66 million of deposits; if just 4% of AARP's 30 million members signed up, the credit union would become America's biggest.

People at some other credit unions expect more than that to happen. Estimates of AARP's potential growth in their business range as high as $20 billion of assets by 1992. This compares with the $3.6 billion held by Navy Federal, the current leader, which takes deposits from people associated with the U.S. Navy.

Banc One of Columbus, Ohio, processes the checks, Visa card charges, and other paperwork for the credit union.

THE U.S. GETS BACK IN FIGHTING SHAPE

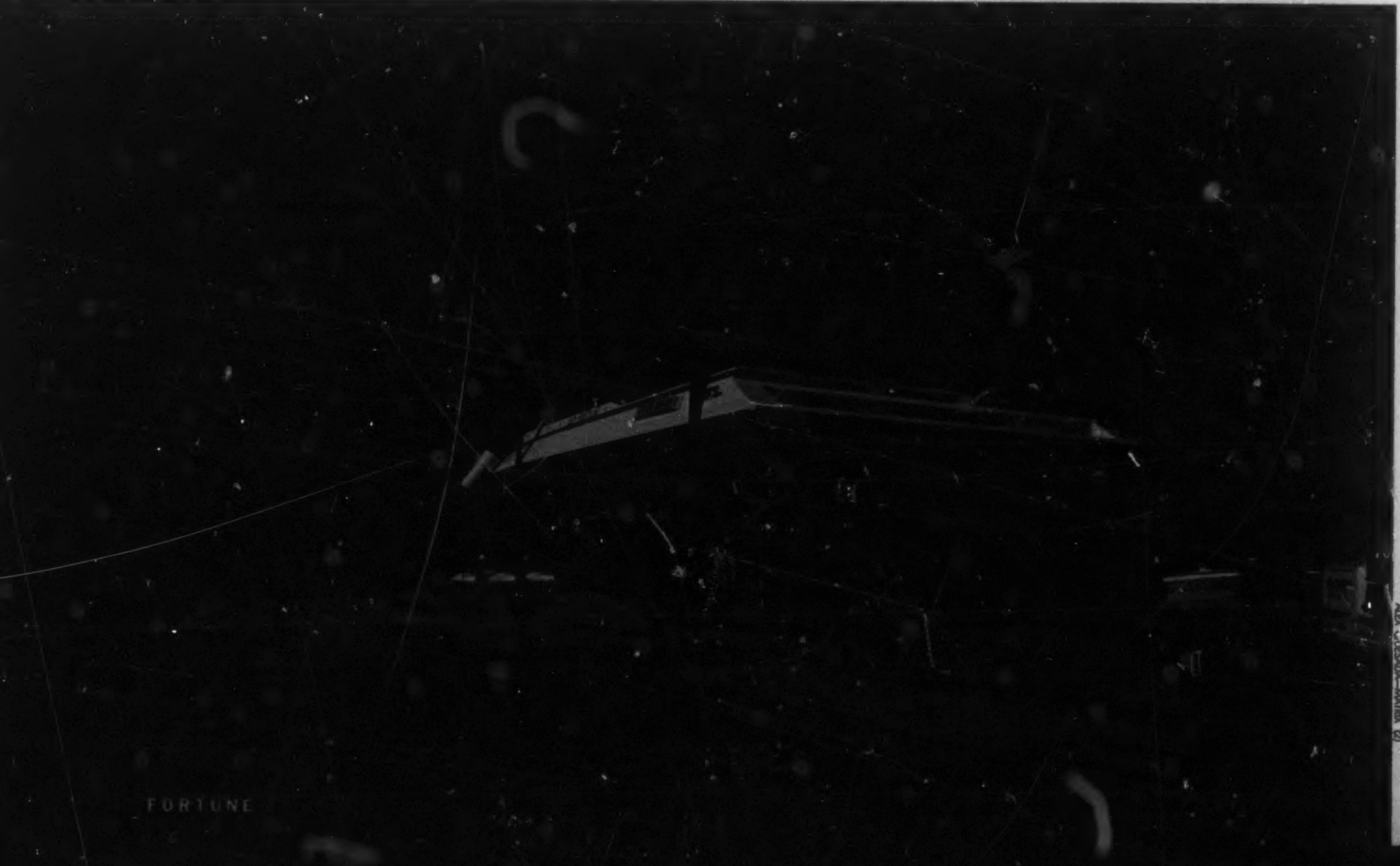
Forget those lurid tales about American manufacturers turning into worldclass wimps. The truth is, they measure up better every day against foreign competitors. ■ *by Alex Taylor III*

AMERICAN INDUSTRY—a Gulliver in Lilliput, a feeble giant hamstrung by canny Asians and newly energized Europeans? There never was much truth to that idea, and these days it's downright absurd. The U.S. is gaining ground against global competitors, not losing it. The cheap dollar gets some of the credit, of course. But the FORTUNE 500 industrial companies—and some smaller manufacturers as well—have made long strides in productivity, management, quality, and cost control. They are blasting their way into new foreign markets and grabbing customers from overseas competitors. More than a few U.S. companies—notably in computers, pharmaceuticals, and telecommunications—are extending their worldwide leads.

The evidence of growing U.S. clout permeates the latest trade reports. In the past year American exports have risen a near-record 26%, with steel, aluminum, and lumber providing the biggest push. In January, for the first time in five years, the U.S. sold more goods to Western Europe than it bought. Analysts at the Commerce Department say exports would have grown even faster had they not bumped up against temporary capacity limits.

The trade deficit figures, long considered the fever chart of U.S. industrial sickness, shrank from $152 billion to $120 billion last year, a 21% decline. The number might have fallen further except that imports are still rising at an annual rate of 10%. That's not all bad, however: U.S. companies, which had let their plants and equipment run down, have ratcheted up investment and are buying lots of machinery overseas.

Among the 24 members of the OECD, which include the world's industrialized powers, the U.S. is making the biggest export gains. It is ahead of No. 3 Japan in total export volume and catching up with



FORTUNE 500 companies lead the competitiveness revival. Spanish workers unload a motorboat made by Outboard Marine (No. 235).

ALEX QUESADA—MATRIX (2)

Germany. This year, while the export share of nearly every other OECD country is expected to fall, the U.S. component is heading toward a 25-year high. FORTUNE's economists expect overseas sales to go up another 7% in volume over the next 16 months.

THE BIGGEST winners from the 30% depreciation of the dollar since mid-1985 have been such worldclass exporters as airplane and computer makers, who have increased the demand for their sought-after products by cutting prices in foreign currencies up to 50%. Traditional homebodies such as food processors and toy manufacturers are discovering the allure of overseas markets. ConAgra is making a big push in Japan, where it is increasing shipments of seafood, frozen food, beef, and grain. Hasbro has found a worldwide market for its best-selling G.I. Joe.

For industrial companies of FORTUNE 500 heft, setting up factories abroad is often better than exporting. That way they get closer to overseas customers and simultaneously insulate themselves from currency swings. While the dollar was falling Americans were building smokestacks abroad, and now they are savoring the payoff.

Scott Paper, already up and running in France and Belgium, is adding paper machines in Belgium, Italy, and Spain, and raised European sales from $900 million in 1987 to over $1 billion in 1988. Europeans have customarily consumed less toilet paper and fewer paper napkins and hankies than Americans because those products were expensive and the quality was poor. Scott figures that consumption will rise substantially over the next four years, and with its superior papermaking technology it expects to absorb 60% of the increase.

Scott has even grander plans for Asia (see Competition). It wants to plant 250 million eucalyptus trees on a remote 345,000-acre tract in Indonesia to produce pulp. The company is moving more cautiously than did billionaire Daniel Ludwig, who leveled huge tracts of Amazonian land in 1967 only to discover that the soil was too thin to grow the kind of trees he wanted. Scott plans to plant 21 million seedlings annually for 14 years. When the trees are ready to be harvested, the company will erect a pulp mill nearby with a capacity of 1,000 metric tons a day.

ALEX QUESADA—MATRIX (2)

USX (No. 23) rolled steel headed for Japan

Reynolds Metals, which was closing aluminum smelters five years ago, is adding fabricating machinery in Belgium, Brazil, Italy, Spain, and West Germany. Like Scott, Reynolds is trying to prime a nascent market. Western Europe consumes only one-twelfth as many aluminum beverage cans as the U.S. does.

THE COMEBACK in American competitiveness is forcing experts to reconsider the events of the past 15 years. Economist A. Gary Shilling, who runs his own New York City consulting firm, now views most of the 1980s as a transition between the excess demand that erupted after World War II and the overcapacity that more recently inundated markets around the world. During the transition, many U.S. companies became temporarily exposed as the high-cost, low-quality producers. "We were naked as the proverbial jaybird," says Shilling. "It is a very tough road back, but we are correcting for not just years of mistakes, but decades."

In retrospect, the hard times U.S. manufacturers suffered in the 1970s and early 1980s may have been only the symptoms of a cyclical change, not a permanent reordering of the world economy. No one expects America to start making lots of T-shirts or radios again. But critics have tended to tar all manufacturers with the brush they used for automobiles, steel, machine tools, and semiconductors—the backbone of any modern industrial economy and thus the biggest weapons of international trade. Even in these once beleaguered businesses, an upturn is finally visible.

Japanese buying Cross pens in Singapore

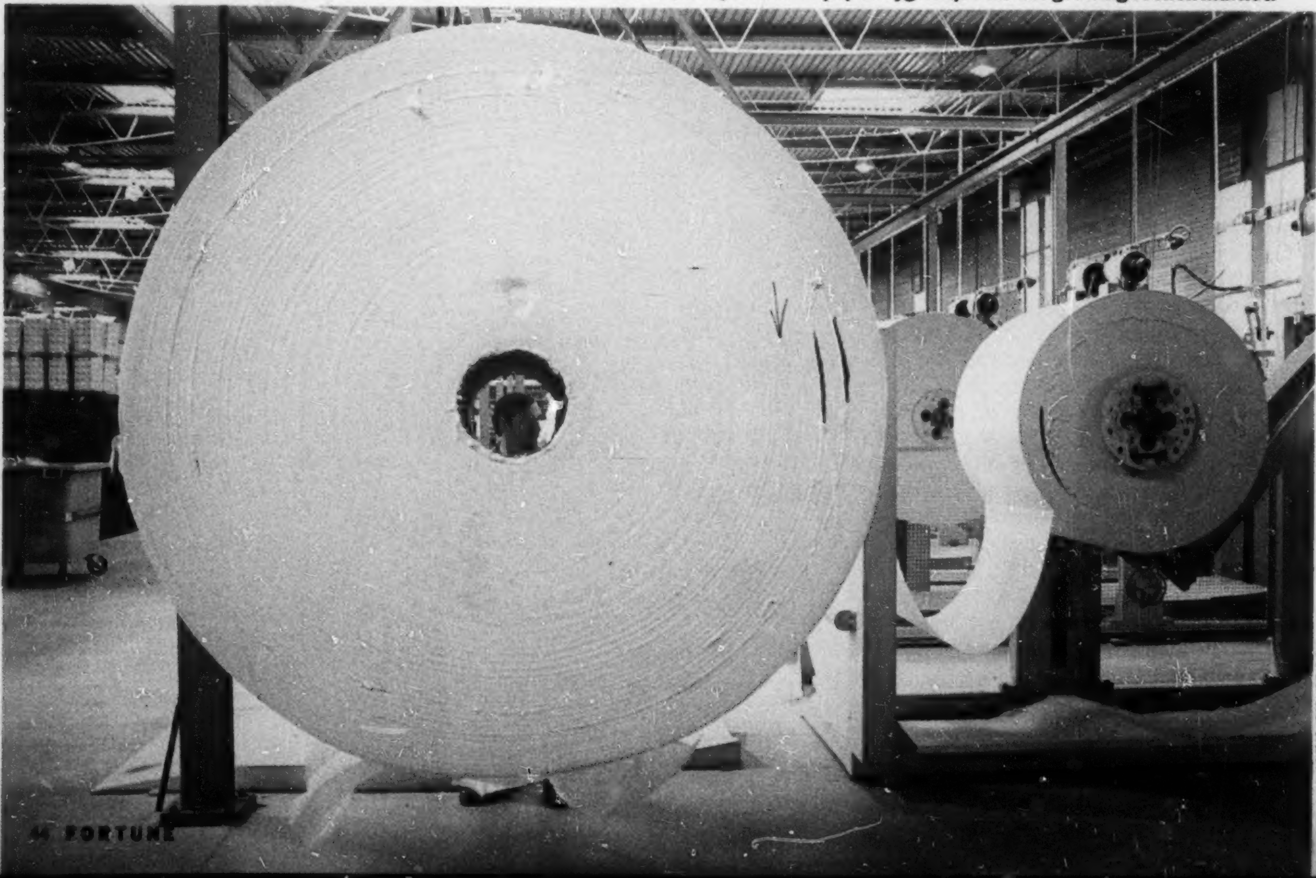
R. IAN LLOYD

What gets overlooked are success stories like Timken's. The Japanese were driving the Canton, Ohio, maker of roller bearings to the wall in the early 1980s, so it redoubled efforts to make its products more competitive. Says President Joseph Toot: "Bad products or management weren't the problem, so it would have been foolish to go out and try something we had never done before." Timken cut prices 30% and increased quality enough to lengthen the guarantee on its truck axles from 100,000 miles to 500,000 miles. The company started selling to Japanese manufacturers in 1987 and expects to make big gains there this year (see "Factories That Shine").

Here's a closer look at five important areas where U.S. manufacturers are making big gains that are paying off in world competitiveness:

PRODUCTIVITY. In recent years, international comparisons made U.S. productivity appear worse than it was. As the second leg of the postwar economic boom roared along from 1960 to 1973, Western European countries and Japan posted annual productivity gains ranging from 6.6% to 10.3%. Because the U.S. had been running at full speed since the early 1950s, its annu-

This two-ton roll at Scott Paper's Orléans plant will be cut into some 30,000 packets of *papier hygiénique* for the growing French market.



JULIO DONOSO—SYGMA

al increases of 2.9% looked puny by comparison. When worldwide recession took hold in the 1970s, the U.S.'s relative position continued to slip.

Yet the U.S. remains the world leader in per capita national output, with Germany and Japan lagging far behind. Each U.S. worker accounts for $33,000 in gross national product today vs. $24,000 in 1960, measured in constant dollars. "Productivity in most U.S. industries is still higher than in any other country in the world," says Gerald Godshaw, who heads long-term forecasting for Wharton Econometric Forecasting Associates (WEFA) in Bala Cynwyd, Pennsylvania. In the last half of the 1980s the U.S. has been coming on strong. U.S. manufacturing productivity grew at only one-quarter the Japanese rate from 1980 to 1982, but it rose 75% as fast in the years from 1983 to 1987. West German productivity increased only half as rapidly as Japan's in the same period. Says Janet L. Norwood, commissioner of labor statistics: "In the past 28 years, the comparative productivity of our factories has careened from problem to crisis to—possibly—a renewed position of leadership."

American manufacturers are making productivity gains in industries once regarded as mature, according to data compiled by WEFA. In lumber, for example, the U.S. limped along between 1978 and 1983 with annual increases of 1.5%, measured in 1982 dollars. Then productivity more than doubled, rising 3.6% on average in each of the next five years. In primary metals like steel and aluminum, annual productivity changes shifted from −2.8% to +6.5% over the same period.

Some forecasters predict that robust gains in productivity will continue for the next decade. Godshaw of WEFA looks for annual productivity increases averaging 4.4% in electrical machinery and 4.3% in textiles, for example. Overall, he expects durable-goods productivity to climb 3.6% a year through the 1990s.

A DOZEN TOP GLOBAL PLAYERS

COMPANY	FOREIGN SALES AS % OF TOTAL	BEST-SELLING PRODUCT ABROAD	BIGGEST MARKET ABROAD
BOEING	46%	COMMERCIAL AIRLINERS	WESTERN EUROPE
CATERPILLAR	50%	EARTHMOVING EQUIPMENT	WESTERN EUROPE
DOW	55%	INDUSTRIAL CHEMICALS	CANADA
EASTMAN KODAK	45%	AMATEUR FILM	BRITAIN
FORD MOTOR	25%	ESCORT SUBCOMPACT	BRITAIN
GENERAL ELECTRIC	22%	AIRCRAFT ENGINES	WEST GERMANY
HEWLETT-PACKARD	52%	COMPUTER WORKSTATIONS	WEST GERMANY
MERCK	50%	VASOTEC (BLOOD PRESSURE MEDICATION)	N.A.
OUTBOARD MARINE	20%	OUTBOARD MOTORS	CANADA
SCOTT PAPER	38%	BATHROOM TISSUE	WESTERN EUROPE
SUN MICROSYSTEMS	42%	COMPUTER WORKSTATIONS	JAPAN
3M	46%	PRESSURE-SENSITIVE TAPE	WEST GERMANY

Better workers help too. Though the idea defies conventional wisdom, Norwood insists that America's work force "is the most productive in history." More than one in four adult workers has a college degree, up from one in five a decade ago. Reports of a brain drain have been exaggerated. Employment in science and engineering has been growing at a healthy 6.3% annual clip for more than a decade. Scientists and engineers make up 2.8% of the U.S. labor force, compared with 2.5% in Japan.

The U.S.'s worldwide lead in computers gives a huge kick to productivity in the economy as a whole. By WEFA's calculations, productivity in that industry has shot ahead 14.7% annually, on average, in the past five years. Despite strong international competition, American computer companies are striving to maintain their advantage. Compaq, the upstart maker of IBM-compatible personal computers, more than doubled its overseas sales to $800 million last year.

MANAGEMENT. U.S. manufacturers are also reaping the benefits of changes made at home—those painful reorganizations undertaken to rip apart top-heavy management and improve response time. Daniel Valentino, president of United Research, a Morristown, New Jersey, consultant to a number of large manufacturers, views the slump of the early 1980s as the consequence of progress along the learning curve as companies eliminated management by function and installed decentralized management by business unit. "What we did was take a whole set of functional managers and throw them up against the wall," he says. "The ones who adapted to a general management role are now helping us close the competitiveness gap."

That has clearly been the experience at Eastman Kodak. CEO Colby Chandler figures the Yellow Father lost $3.5 billion in worldwide sales from 1981 to 1985 to competitors such as Fuji Photo Film. So he reorganized Kodak's entire $17-billion-a-year operation into 34 strategic business units. Managers who once perched atop a marketing or production pyramid took charge of a single unit and ran it worldwide. Last year almost every unit, from color film to copiers, gained market share. Kodak's exports leaped 23%, to $2.7 billion.

QUALITY. The goods Americans sell overseas are far better made than they used to be. Witness that longtime invalid, automobiles: Though both General Motors and Ford have large overseas operations, Detroit doubled its export sales last year. The Germans, who have a long-term love affair with the Jeep Cherokee wagon, are falling for Chrysler's minivan, which began arriving there last year. Consultants and academics now suggest that by the early 1990s, U.S. car plants really will be turning out vehicles that are nearly the equal of Japanese autos in fit, finish, and durability. European producers are making much smaller quality gains.

continued

REPORTER ASSOCIATE *Susan Caminiti*

Some Americans are also making up lost ground against the Japanese in semiconductors. "The rising sun has hit a peak in the sky," proclaims T. J. Rodgers, the hyperaggressive CEO of Silicon Valley's Cypress Semiconductor. The key here is improving the yield of chips on the silicon wafers used to form them. In the past, U.S. chipmakers have gotten only 20% to 30% yields of usable static random access memory chips per wafer, compared with 80% to 90% for the Japanese. But Cypress now achieves a 70% to 80% success rate.

The Japanese have been eating Americans for lunch in the production of the common memory chips known as dynamic RAMs. Back in the mid-1980s, Japanese chipmakers generated revenue of at least $200,000 per employee, vs. $60,000 to $70,000 at Intel, a leading U.S. producer. But Intel has borrowed manufacturing techniques from the Japanese, doubling revenue per employee to $138,000—vs. $230,000 for the Japanese today. Along with Motorola and Texas Instruments, Intel is making important inroads in Japan's once impenetrable home market.

Specialty goods makers are also prospering. Penmaker A.T. Cross reluctantly launched a fountain pen in Europe in 1982 because many Europeans do not use ballpoints. To its surprise, Cross found that its quality reputation carried over to the nib pen as well. It was so successful that Cross brought it back to sell in the U.S. Cross has no such problems in the Far East. It is a leader in Singapore, where it has been selling ballpoints for more than 20 years.

COST CONTROL. Stung above all by Japanese encroachment on their traditional markets, U.S. manufacturers have counterattacked with a vengeance. In 1984 Henry Schacht, CEO of Cummins Engine, discovered that two key American truck builders, Navistar and Freightliner, were thinking about replacing his diesels with low-priced Japanese power plants. Schacht immediately slashed prices 30%. To get profits back, he cut production costs 20% by changing manufacturing techniques, buying castings and forgings abroad, and reducing factory floor space by one-quarter. The sinking dollar provided the other 10% by allowing him to restore part of the price cut and still undersell his competitors. By 1988 Cummins had recovered all its old truck engine profit margins, though it wound up losing money overall.

Outboard Marine also used deep price cuts to fend off a Japanese assault in Europe on its Evinrude and Johnson outboard motors. It laid off 2,000 people—25% of its nonproduction work force—so it could match prices offered by the likes of Honda and Yamaha. Margins suffered, but Outboard Marine repelled the invaders. Now the company, which also owns several boatmakers including Chris-Craft, has a new gambit: marketing boat-and-motor packages in Europe. The Japanese can't compete because they cannot afford to ship an 18-foot runabout 10,000 miles.

The Japanese can't compete because they cannot afford to ship an 18-foot runabout 10,000 miles.

U.S. manufacturers are generally doing a better job keeping costs down than foreign competitors are. They are getting a better hold on labor rates. In the first eight years of the 1980s, hourly compensation for U.S. manufacturing workers grew on average only 5.7% a year, vs. 8% overseas, and because of productivity increases unit labor costs in the U.S. have been virtually flat for the past three years.

Though they are starting to turn up again, labor costs should give the U.S. a sharper edge in the future. Management sage Peter Drucker argues that wage levels are becoming less relevant in world competition because their share of total production costs is shrinking. Drucker says the pay of U.S. hourly workers accounts for only 18% of costs at the average plant, not including the labor component in the raw materials used. That's down from 23% a few years ago. Going offshore usually carries hidden costs—a penalty of 7.5% for transportation, communications, and the like—so low-wage foreign producers are beginning to lose their edge.

Going offshore carries hidden costs, so low-wage foreign producers are beginning to lose their edge.

CAPITAL INVESTMENT. Measured by the ratio of investment to manufacturing employees, the U.S. outspent both Japan and Germany from 1980 through 1986. The investment-to-worker ratio reflects the speed with which companies are bringing new technology into manufacturing—a key ingredient in global success. The Federal Reserve Bank of New York predicts that investments already made will improve U.S. productivity for some time, since the lag between investment and more efficient output is often several years.

Heads-up investment can produce large dividends, as the U.S. steel industry has proved. The mini-mills that spent heavily on technologically advanced electrical furnaces are less capital-intensive and more productive than conventional integrated mills. Chaparral Steel operates America's most productive new mill, in Midlothian, Texas, and exports steel beams to Europe and Canada. It expects an official go-ahead to supply structural steel for Japanese public projects, which would make it the first company other than South Korea's Inchon Iron & Steel to be able to do so.

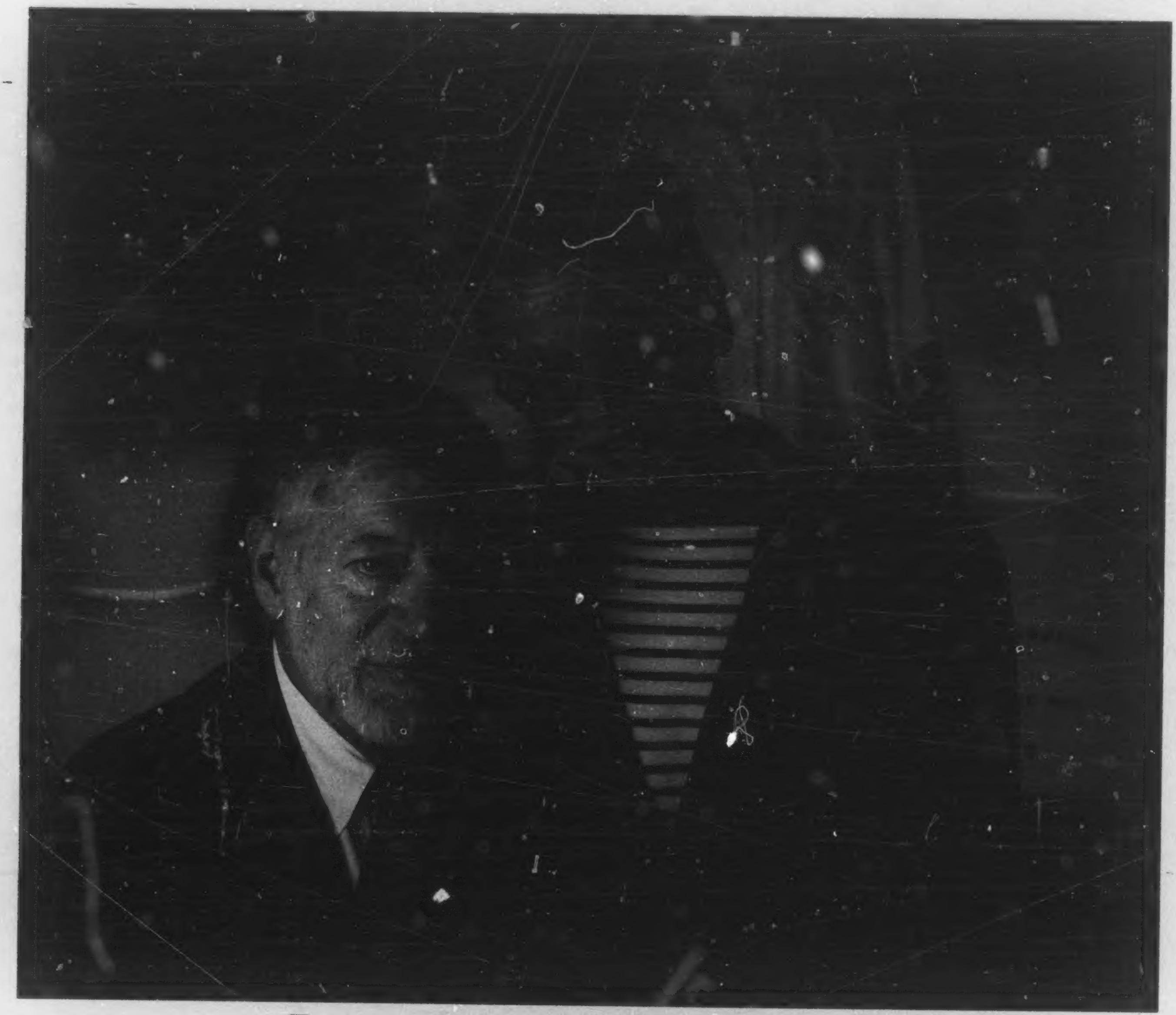
AS THEIR CRITICS are quick to point out, U.S. industries still have some distance to travel. Asia's fast-rising Four Dragons—South Korea, Taiwan, Hong Kong, and Singapore—remain the world leaders in productivity improvement. Many technologists see an urgent need for greater industry-government cooperation to prevent a shortfall in research and development spending as well as a shortage of engineers and scientists.

"We need a cohesive world view through which to filter and market our technology development," argues Thomas Vanderslice, CEO of Apollo Computer, a leading workstation maker. "Only a coordinated effort involving government, business, and academia can achieve it."

Whether Vanderslice is right or not—and lots of people would give him an argument—it is long past time to take off the hair shirt. U.S. industry has accelerated enormously in the past few years, and even if the dollar continues to creep upward, further payoffs are yet to come from other improvements already in the works. Maintaining competitive supremacy, however, is like speeding down an endless highway. The smart drivers keep their feet to the floor. F

SECRETS OF THE SUPERSTARS

The most profitable FORTUNE 500 companies of the last ten years have a few pointed messages to deliver about product quality, costs, and sticking to what you know best. ■ *by Carol J. Loomis*



ELISABETH CLAIBORNE AND ARTHUR ORTENBERG

LIZ CLAIBORNE

■ *She, 60, is chairman, president, and CEO; he, 62, is vice chairman. Together, as husband and wife, they built the classy fashion-apparel company that ranks first on FORTUNE's list of stars.*

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RICHARD T. MERRILL
COMMERCE CLEARING HOUSE

By way of CCH's reports and computations, President and CEO Merrill, 60, has made super financial returns off others' tax returns.

WHY DON'T WE do this more often?" the 500 largest industrial companies might say of 1988, a year of splendid profitability. "*We do,*" 21 members of the group could answer. These are the stars of the FORTUNE 500 identified by this magazine in a special study of sustained profitability. Some are relatively new to the list, such as Liz Claiborne and Commerce Clearing House, and some have been standouts there for many a year. In general, these are the rich of big business and, yes, they are different. Just look at their stellar stock performance. But their behavior beams down important messages to all managements.

We picked out these 21 by looking at return on equity—the ratio, that is, of after-tax profit to stockholders' equity—which is a fundamental guide to how well a company's management is employing the owners' money. Our span of measurement was ten years. To shine as a star, a company had to have averaged at least a 20% return on year-end equity over the 1979-88 decade and been so consistent that it never dropped below 15%. We knocked out companies that met the tests only because they sold off assets. In other words, we were looking for year-in, year-out performers.

The standards are rigorous. We know that because we have some fallen stars from a 1984 study to lament. We know it also because the FORTUNE 500 as a whole has earned far less: Its median return on equity over the 1979-88 decade averaged only 13.3%. Further, logic proclaims that a long-running 20% is a marvelous thing. It is equivalent to a 20% savings account, on which part of the return is typically paid out as dividends and some is retained, also to earn 20%. Where else can an investor park money and share in such earnings?

Breaking into stardom was especially tough when FORTUNE made its first sweep five years ago. We were then examining a decade, 1974-83, that hammered business, testing it with no fewer than three recessions, rising energy prices, and pervasive inflation. Only 13 companies among the 500 industrials met our tests.

Why more now? First, this last decade, which included the longest peacetime economic expansion ever, was *easier*. Second, some of today's stars, like the rest of the corporate world, have increased their use of debt and thereby bolstered their returns on equity. Third, a kind of pseudo-shareholder, the U.S. government, helped out by cutting corporate tax rates, from 46% to 34%, thus reducing its share of the profit pie.

Even so, from top to bottom this is a financially superb assembly of companies, which share certain characteristics. Most are quality obsessed, cost conscious, and driven to be even better than they are. They tend to be conservative in capital structure; none owe their place among the stars to a sliver of equity and a slab of debt.

They can afford to be conservative. Most enjoy a flood of cash every year, thrown off by some of the most rewarding operations in the world. On page 60, in fact, we present a first-time-ever ranking that draws on the segment data presented in annual reports and spotlights the best—and worst—businesses of these 21 best companies. Can you begin to comprehend an operation that annually makes nearly 300%, pretax, on assets? One company claims such performance—and the reality, as you will see, is even better than the claim.

The problem with the cash these businesses throw off is that it has to be invested. Most of the 21 contend with this enviable headache day in, day out, and in their "solutions" have often proved strikingly inept. For all their excellence in other ways, many have erred by not sticking to their knitting.

The exemplar in FORTUNE's galaxy is Liz Claiborne Inc., whose ten-year average

To make this elite assembly, a company had to have averaged at least a 20% return on stockholders' equity over the past ten years and never have dipped below 15%.

A GALAXY OF FORTUNE 500 STARS

	COMPANY	RETURN ON EQUITY 1979–88		
		Average	**BEST** Year	**WORST** Year
1	LIZ CLAIBORNE	40.3%	71.0% 1979	24.1% 1988
2	COMMERCE CLEARING HOUSE	38.8%	67.7% 1979	23.0% 1988
3	KELLOGG	31.9%	51.4% 1984	24.6% 1979
4	AMERICAN HOME PRODUCTS	31.3%	33.4% 1987	30.0% 1979
5	UST	27.7%	35.8% 1988	22.6% 1979
6	DELUXE	26.9%	30.3% 1987	24.3% 1980
7	TAMBRANDS	26.0%	29.8% 1984	23.2% 1980
8	MAYTAG	25.6%	36.8% 1987	18.2% 1980
9	MERCK	25.4%	42.8% 1987	18.5% 1983
10	JOSTENS	25.3%	50.5% 1988	19.1% 1985
11	DOW JONES	25.2%	27.5% 1979	19.7% 1988
12	ABBOTT LABORATORIES	25.0%	30.5% 1988	20.0% 1979
13	EG&G	24.7%	35.7% 1984	19.0% 1986
14	PHILIP MORRIS	23.7%	30.4% 1988	20.2% 1980
15	COCA-COLA	23.4%	31.2% 1988	18.4% 1982
16	WASHINGTON POST	23.3%	32.7% 1985	15.3% 1981
17	VF	22.3%	29.9% 1983	15.7% 1986
18	BRISTOL-MYERS	21.0%	23.4% 1988	19.3% 1979
19	NALCO CHEMICAL	20.6%	24.2% 1981	15.6% 1986
20	NOXELL	20.5%	21.9% 1984	19.8% 1980
21	ANHEUSER-BUSCH	20.2%	23.1% 1988	16.6% 1980

PHOTOGRAPHS BY DOUG MENUEZ

return on equity, a dazzling 40.3%, makes it first among the 21. This is a company that did not even exist until 1976 and in 1979 had only $48 million in sales. But that was fasten-your-seat-belts time, recalls the company's vice chairman, Arthur Ortenberg. About then, he says, the company's chairman—who is his wife, Elisabeth Claiborne—was coming to "the horrendous realization that she was now in the process of clothing all of America." The chairman knows a spousal overstatement when she hears one: "Not quite all, at that point," she demurs. Ortenberg, nonetheless, had the future stitched out: Customers, particularly working women, thronged to buy his wife's classically designed, well-made clothes. Last year Liz Claiborne—the company, led by the person—was No. 299 on the FORTUNE 500 with $1.2 billion in sales.

Then, as if to say "mission accomplished," the Ortenbergs announced in February that they would retire in June and think about climbing other mountains, real ones. The new chairman will be Jerome A. Chazen, 62, who knew the Ortenbergs before they started the company, joined it in 1977, and has been a lead player in its progress. A tough act to follow he's got. But the company, he says, has "a life of its own now." Besides, he adds wryly, challenge is a familiarity in the fashion world, where "you're only as good as your last line."

THAT BROMIDE also has meaning at an anti-exemplar, SmithKline Beckman, which has dropped out of the firmament. Ten years ago it was a seasoned, solid company, blessed with a wonder drug, the ulcer therapeutic, Tagamet. "A pharmaceutical gusher," to quote Chairman Henry Wendt, it pushed the company's returns to the sky. On FORTUNE's list of five years ago, SmithKline ranked fourth among the galaxy of 13.

But many outsiders had long wondered whether competition might develop for the drug. "How can you improve on Tagamet?" a SmithKline executive reassured a FORTUNE reporter in 1980, and for a time no one did. Then Glaxo Holdings, a British company, brought on Zantac, a stronger drug that began to perforate Tagamet's market.

KATHARINE GRAHAM
WASHINGTON POST

■ *Taking over tremulously in 1963 after her husband's suicide, Chairman Graham, 71, made the publisher a force in broadcasting and cable TV. Says Post investor Warren Buffett: "She never lets her ego get in the way of her judgment."*

The Washington Post

Along the way, SmithKline overpaid for an acquisition, Beckman Instruments, and despite huge research spending failed to produce any important new drugs. Last summer, shocking Wall Street, SmithKline suddenly disclosed that profits would be down for the year. Months later, it announced it would lay off 1,600 employees and take a restructuring charge of $293 million. "This company is colossally screwed up," says a money manager who used to own the stock. "They *had* the ulcer market—they were there first. The point is that nothing lasts forever if you've got crummy management."

A second point is that SmithKline had a 1988 return on equity of only 14.8%, not enough to stay in the club. As a dropout from FORTUNE's high-return list, SmithKline has four others for company. The stunner is IBM, whose return on equity for the last three years has been under 15%. Asked in 1984 what he thought the probabilities were of IBM continuing to meet the list's statistical tests for another ten years, Frank T. Cary, then chairman of the executive committee, whipped back: "100%."

Two other dropoffs have slipped to averages around 19%, which still is excellent: Worthington Industries, a specialty steel company, and Dover Corp., a diversified metal-bender. The fifth among the fallen, Mitchell Energy, an independent oil and gas producer, sank precipitously to meager profits with the collapse in energy prices.

As the dropoffs prove, the stars do not enjoy lifetime tenure. All the more striking, then, is the enduring performance of eight survivors from 1984. In order of appearance on this year's list: Kellogg, American Home Products, Deluxe Corp. (until recently called Deluxe Check Printers), Maytag, Merck, Dow Jones, Coca-Cola, and Nalco Chemical. A hand, ladies and gentlemen: You are looking at a collection of financial wonders.

The eight hold title to some powerhouse brand names, but are notable mainly for their diversity. The newborn stars, as well, sprawl over the business landscape, though some come in twos, as if preparing to board an industrial Noah's ark. Besides Liz Claiborne in apparel, there's VF Corp., which got its initials from Vanity Fair lingerie but is known chiefly for its Lee and Wrangler blue jeans. Two arrivals are pharmaceutical companies that have steadily increased their returns: Abbott Laboratories and

REPORTER ASSOCIATE *William E. Sheeline*

ROBERT A. SCHOELLHORN
ABBOTT LABORATORIES

■ *CEO since 1979, Schoellhorn, 60, has spurred productivity, called for earnings gains averaging 15% a year, and made Abbott's diagnostic line the leader. A price war has cut infant-formula profits, but nutritional products for adults are a plum.*

Bristol-Myers. Two are tobacco types: Philip Morris and UST, whose Skoal and Copenhagen brands make it the king of smokeless. And two are publishers: Washington Post and Commerce Clearing House, whose tax reports keep lawyers and accountants up to speed.

Washington Post's chief executive, Katharine Graham, and Liz Claiborne are another kind of pair. Only three FORTUNE 500 companies are headed by women. One of them, Warnaco, whose chief is Linda Wachner, has lately been running losses. But Graham's and Claiborne's companies captured two spots out of 21. Statistically, companies led by women are entitled to only one-eighth of a spot. This writer, for one, does not find the over-representation of women surprising.

Four of the five remaining newcomers, Anheuser-Busch, Jostens, Noxell, and Tambrands, get their returns and their reputations mainly from the business they were built on. Anheuser-Busch claims 41% of the U.S. beer market, up from 33% five years ago, and is determined to get to 50%. Jostens plies the education market: It sells class rings, yearbooks, and photos to students, and computer systems to schools. Noxell's cosmetics and toiletries—Cover Girl, Clarion, Noxzema—fill the display racks of mass merchandisers.

Tambrands, which changed its name from Tampax, owns about 60% of the U.S. tampon business. Tambrands also has an oddball distinction for a member of the 21: management trouble. After losing the confidence of his board, Tambrands Chief Executive Edwin Shutt Jr., 61, recently "retired," a departure that proves high returns don't necessarily guarantee the boss his job. Part of Shutt's problem was a diversification program that hasn't produced much.

THE 21st COMPANY, EG&G (its founders' initials), is so complex that Wall Street analysts pale at figuring it out. The company has 152 businesses, most technologically based and some with only $3 million or so in sales. Among EG&G's products are meters, valves, and X-ray equipment used at airport security checkpoints. But the company also manages many government facilities, among them the Kennedy Space Center. When the *Challenger* shuttle exploded in 1986, EG&G helped analyze debris, answer mail, and devise new safety procedures.

Remember the business that makes nearly 300% on assets? That's the manufacturing, research, and managerial work that EG&G does for the Department of Energy, at such nuclear facilities as the Nevada Test Site. Wouldn't you know that the return comes from government contracts?

The plot thickens if you scrutinize this enterprise. EG&G's 1988 annual report shows the Energy Department business earned an operating profit of $22 million last year on $8 million of assets. But, says EG&G's chairman, John M. Kucharski, 53, this operation does not have plant, equipment, inventories, or even a bank account: To pay its employees, it simply writes checks on a special government account. What the operation does have is a periodic fee that it charges the feds. So the assets here, says Kucharski, are simply the receivables that materialize briefly while EG&G is waiting to be paid. The reality, says Kucharski cheerfully, is "zero investment." But, he adds, "Bean counters do not deal well with infinity," which is why the segment data present the receivables as assets.

Infinity an investor can't match. But as long as he does not pay wildly for a high return, he can expect the company delivering it to give him long-term results that beat the stock market. As a whole, these 21 did not disappoint. Twenty of the group were publicly traded at the end of 1978, and their median total return to investors—stock appreciation plus dividends—over the following decade was an annual rate, compounded, of 21.6%. That's about four percentage points better than the 500 did as a whole, which over time makes a ton of difference.

The prize for best annual total return, 35.4%, goes to VF, which ten years ago was a relative unknown, just beginning to hit its stride. The worst return, though it is still not bad, was Nalco's 14.9%; its stock has just been hanging around since 1983, partly because the oil bust hurt sales of its specialty chemicals. Liz Claiborne, which went public only in 1981, has been the real knockout. Its stock price is up 14-fold since then, and the company has tossed in some small dividends. Annualized total return: 43%.

As the last decade began, an investor could not have known, of course, just which companies were going to produce star-quality returns on equity. But he could have looked at FORTUNE's first list of stars when it was published in April 1984, and decided to buy. Five of these companies, remember, have fallen from grace. None-

Lawrence R. Pugh and Robert E. Gregory Jr.

VF CORP.

■ *Chairman Pugh, 56, and President Gregory, 46, have miraculously earned high returns on near-commodities: jeans, lingerie, athletic wear. VF zealously contains inventories. Buildups, says Pugh, are "the fastest way to get yourself in trouble."*

theless the median total return of the 13, annualized, has been 17.8%. In contrast, Standard & Poor's 500-stock index provided a total return over the period of only 11.4%, which is two tons of difference.

Kellogg and Merck led the parade with superstar returns: 40% and 35% annualized. Ten other companies had positive returns, ranging from Deluxe's 32% down to Dow Jones's 5%. Mitchell Energy, natch, brought up the rear with a minus 11%. So what? In investing, if enough stars shine, a few can flicker.

The management skills that make the high-return companies excel, in the market and every day, cannot readily be generalized. "If any specific way of approaching problems is common practice," says Claiborne's Art Ortenberg, "it is by definition incorrect." Well, says his wife, she does think there's something that matters to most businesses: "Keep your eye on the product. That was all-important to me."

The philosophies of both are visible in their decision not to own any manufacturing plants, but instead to contract work out. In earlier careers, each had seen the rigidities built into certain textile businesses, which cared more about keeping their mills going than they did about consumer preferences. Says Ortenberg: "When you see something like that, you realize that small and flexible is where it's at, and large and repetitive is sheer disaster." Nevertheless, Claiborne's executives—very much including the woman with her name on the door—have worked with their manufacturers, most of them in the Far East, just as closely as if they owned them. The goal, the boss says, has always been quality.

AT COMMERCE Clearing House, runner-up on the stars list, quality is called service. When Congress suddenly passed a new tax law last November, CCH exploded into action, working on Thanksgiving Day and straight through until Christmas to get the law's particulars into its 1988 tax reports. "We did it, and none of our competitors did," proudly says Richard Merrill, CCH's president, which no doubt helps explain why CCH is the runaway leader in this business.

Anheuser-Busch and Kellogg have much in common. Both are capital intensive, which most of the stars are not. Both dominate their markets and protect their brands with heavy advertising. And both are apostles of quality. Indeed, the brewer's chairman, August A. Busch III, 51, is so fervent about taste and "drinkability" that he brags about being the industry's high-cost producer. His business makes up for the money it lavishes on brewing, he says, by being super-efficient elsewhere—for example, in the manufacture of cans. Busch is also thinking of vertically integrating still further, into bottle manufacture, which is a business overrun today by leveraged-buyout companies, such as Owens-Illinois. Busch doesn't like the prices being asked for bottles. "Somebody has to pay the banker," says Busch, and he'd rather not be the one.

Busch says his unions are his "partners" in striving for quality, and Daniel J. Krumm, 62, chairman of Maytag, home of the Lonely Repairman, makes the same point: "Our unions have never resisted when we wanted to do something that would improve quality." But Maytag has had difficulties, he says, in trying to transplant its quality culture to stovemaker Magic Chef, acquired in 1986.

Cost control is another banner that many of the stars wave. The champ in this area when FORTUNE did its list five years ago was American Home Products, a widely diversified company that makes such products as Inderal, Advil, and Chef Boyardee spaghetti. Traditionally the executive lifestyle has been spartan. Miraculous to report, American Home has recently bought a plane—for convenience and security reasons, says Chairman John R. Stafford, 51. But let it not be thought that discipline has buckled. One Wall Street analyst recalls asking Stafford admiringly some time ago how he kept profits moving ahead so steadily. "Well," said Stafford, "if a manager goes over budget, I call him in for lunch." Pause. "No one gets invited to lunch twice."

American Home's insistence on ever-higher profits may help explain a financial disaster that has befallen that company and two other stars, Abbott Laboratories and Bristol-Myers. Those two dominate the infant-formula market, in which American Home is a distant No. 3. A government assistance program called WIC—for Women, Infants, and Children—is important to all these companies, accounting for about one-third of all cans of formula sold. Under the program, which is paid for by Washington but administered by the states, families at or near the poverty level are supplied vouchers to buy the product.

Over the years, the states tried repeatedly to egg the companies into a bidding war for the WIC business. No one cracked. Then, in 1986, Tennessee finally got American Home, which was hungry for market share, to bid for the state's entire business. The price American Home agreed to take was 81 cents a can, vs. the $1.29 then prevailing.

Two unsurprising things happened next: Oregon and other states leaped into this breach, all asking for bids, and Abbott and Bristol-Myers jumped to a defense of their market shares. By now, 41 states are exacting some kind of discount on the product. Lorraine Schwarz, a Salomon Brothers analyst, estimates that Abbott will average only 50 cents a can this year for its WIC sales. At that price, Abbott is selling below fully loaded cost and is engaged, says Robert Schoellhorn, the company's chairman, in a "charity business."

The three companies nevertheless continue to battle for sales—and cry over their spilled milk. Analyst Schwarz believes that Abbott, for example, will earn only about $260 million, pretax, on infant formula this year, against the $360 million that could have been made had American Home not begun discounting.

OPERATING MISTAKES of that magnitude are rare in star territory. But a raft of investment disappointments have made these prize performers acutely aware of their own limitations in running businesses other than those they grew up with. Jostens has been a better acquirer than most and remains on the hunt. It is even ready, when necessary, to pay the big prices that acquisitions command and that help create the disappointments. But, says Chairman H. William Lurton, 59, with feeling: "You really don't know a business until you have to manage it."

Jostens, for example, thinking that its knowledge of the education market could be extended broadly, bought some postsecondary schools that teach business skills. "But," says Lurton, "they were so different from what we knew. This was a service business that required intensive management, and there were a lot of legal requirements, and we couldn't figure out how to keep close track of what the schools were doing. One thing about us: If we feel uncomfortable for any reason, we'll swallow our pride and divest," which is what Jostens did.

The differences between core businesses and add-ons are dramatically displayed at Philip Morris and UST. For both, tobacco is marvelously lucrative, partly because the retail buyer craves the product and tolerates

WHERE THE BEST BUSINESSES MAKE THE MOST—AND LEAST

This unique lineup shows what our 21 stars earned last year, pretax, on their "identifiable assets" in various businesses. Seven companies present their entire business as one segment, and a few figures don't tell all. Commerce Clearing House's publishing business is more gemlike than it looks because its tax report subscribers supply interest-free capital by paying in advance. Ditto Washington Post's Newsweek. *But with national advertising weak, it took a restructuring charge for employee early retirements and an office move.*

	COMPANY	SEGMENT	OPERATING INCOME 1988 $ millions	RETURN ON ASSETS 1988 %
1	EG&G	Dept. of Energy contracts	22	272.3
2	UST	Tobacco	278	95.2
3	BRISTOL-MYERS	Nonprescription health prods.	471	74.3
4	MAYTAG	Soft-drink vending equipment	53	71.4
5	PHILIP MORRIS	Tobacco	3,846	64.1
6	DELUXE	Checks and payment systems	266	63.9
7	COCA-COLA	Soft drinks, international	1,339	63.8
8	WASHINGTON POST	Newspapers	141	52.7
9	MERCK	Human and animal drugs	1,806	49.9
10	ABBOTT LABORATORIES	Drugs and nutritional products	773	47.5
11	BRISTOL-MYERS	Toiletries and beauty aids	223	42.6
12	BRISTOL-MYERS	Household products	81	42.2
13	WASHINGTON POST	Broadcasting	64	40.5
14	EG&G	Technical services	28	40.2
15	AMER. HOME PRODUCTS	Food and household products	202	36.8
16	BRISTOL-MYERS	Drugs and medical products	565	31.2
17	AMER. HOME PRODUCTS	Drugs and health care prods.	1,114	30.6
18	NALCO CHEMICAL	All products	181	30.3
19	TAMBRANDS	All products	136	30.2
20	LIZ CLAIBORNE	All products	182	29.0
21	EG&G	Defense products and services	19	26.2
22	KELLOGG	All products	775	24.9
23	NOXELL	All products	82	24.9
24	DOW JONES	Business publications	113	24.0
25	MAYTAG	Home appliances	183	23.3
26	EG&G	Aerospace	14	23.0
27	ANHEUSER-BUSCH	Beer	1,168	22.9
28	DOW JONES	Community newspapers	43	22.7
29	DELUXE	Computer and business forms	10	21.9
30	COMMERCE CLEARING HSE.	Corporate services	13	20.9
31	COCA-COLA	Soft drinks, U.S.	352	20.6
32	JOSTENS	All products	76	19.1
33	EG&G	Instruments	16	19.1
34	WASHINGTON POST	*Newsweek* magazine	20*	18.8
35	VF	All products	330	18.7
36	EG&G	Industrial components	23	18.2
37	WASHINGTON POST	Test prep. servs. and other	9	18.0
38	DOW JONES	Financial information services	212	17.8
39	ABBOTT LABORATORIES	Hospital and laboratory prods.	363	17.7
40	MERCK	Specialty chemicals	62	14.4
41	COMMERCE CLEARING HSE.	Publishing	42	14.0
42	COMMERCE CLEARING HSE.	Tax return processing	15	13.7
43	COCA-COLA	Food	89	12.9
44	ANHEUSER-BUSCH	Entertainment and other	41	12.0
45	PHILIP MORRIS	Beer	190	11.7
46	DELUXE	Greeting cards and other	13	6.1
47	WASHINGTON POST	Cable television	20	5.3
48	PHILIP MORRIS	Financial servs. and real estate	162	5.1
49	ANHEUSER-BUSCH	Food	55	4.5
50	PHILIP MORRIS	Food	392	1.6
51	UST	Wine	1	1.1
52	UST	Pipes and cleaners	(2)	–

*Earnings before a restructuring charge of $21 million.

price increases that other consumers might not. Would-be entrants into this industry are also virtually barred because tobacco products cannot be advertised on television. That prohibition, which fell on UST only in 1986, has nicely cut marketing costs, says UST's president, Nicholas A. Buoniconti, 48, the former Miami Dolphins linebacker. But, he says, thinking of smokeless tobacco lawsuits, “All we've done is transfer the advertising budget to legal and corporate affairs.” Sitting by, UST's communications vice president winces, no doubt wishing his boss had chosen in this instance not to communicate.

Legal costs notwithstanding, UST's tobacco business earned 95%, pretax, on assets last year, a feat placing it second only to EG&G's nuclear wonder. A touch further down FORTUNE's segment list is Philip Morris's huge tobacco operation, with a return of 64% and so many dollars in profits—$3.8 billion—that it has some claim to being, in a financial if not a health sense, the best business in the country. Philip Morris, furthermore, has expertly clawed its way up in this business, raising its U.S. market share in the last decade alone from 29% to 39%.

But do these tobacco facts make Philip Morris and UST any good at running other kinds of business? Look at the bottom of the list. There you will see two UST operations: wine, on which it earned only 1%, and some miscellany—mainly smoking pipes and cleaners—that lost money.

PHILIP MORRIS'S beer and food businesses are cellar dwellers also, of a monster kind. Included in the food segment are both General Foods and Kraft, in which Philip Morris has no less than $25 billion invested. Operating profits in 1988 were clobbered by a $348 million General Foods restructuring charge and include only a few weeks of Kraft's 1988 earnings. But even if both companies had contributed a full plate of profits, Philip Morris would have earned no better than 6%, pretax, on food. Treasury bills, at 6.4%, would have provided an edge.

Anheuser-Busch might chortle at Philip Morris's experience with beer, in which it is a no-foam No. 2 with about 21% of the market, were it not for Busch's dismal encounter with food. It made less than 5% on that business in 1988, and that was a relatively good year for baker Campbell Taggart, Busch's main food operation. Jerry Ritter, Busch's chief financial officer, says the company overestimated its ability to transfer its skills to a different field. Says his boss: “We sure learned this business the hard way.”

A few stars besides Jostens continue to look for acquisitions. But many have simply resorted to repurchasing their own stock, which amounts to buying into a business they know intimately and love. In the last few years Merck has spent $1.9 billion buying in 13% of its stock, and recently announced it might put as much as $1 billion more into the program. Other companies, such as Kellogg and Abbott, have even taken on debt to make repurchases.

Roberto C. Goizueta, 57, chairman of Coca-Cola, is a true convert. A few years ago he was busy acquiring bottling companies and Columbia Pictures and telling the world how much sense that made. He has since reduced Coke's stake in these to under 50%, guzzled $2.3 billion of his own stock, and shown a thirst for more. Compared with Coke, Goizueta says, the bottlers and Columbia have lower returns and less-consistent cash flow. Buying Coke stock, he says, is simply “a wiser use of capital.” His conclusion agrees with a FORTUNE study (April 29, 1985), which showed that the typical company making significant repurchases because it thought its stock cheap had sharply outperformed the market.

Stardom does not confer protection from takeover. At times rumors have rumbled around Tambrands, Maytag, Jostens, and VF, among others.

Stardom, alas, does not necessarily confer protection from hostile takeovers, and indeed may invite them. Five of the 21 look safe: Dow Jones, Washington Post, and Noxell are insulated by two classes of common stock, and Kellogg and Commerce Clearing House have large shareholders in their camp. Kellogg's is the Kellogg Foundation, whose stake is 34%, and CCH's is the Thorne family, at 56%. Another few members of the galaxy might seem untempting targets: EG&G, for example, because of its technology and its ties to the government.

But takeover rumors have from time to time rumbled around Tambrands, Maytag, Jostens, and VF, among others. Today, VF's chairman, Lawrence Pugh, views his moderately leveraged capital structure uneasily. “Having a great balance sheet,” Pugh says, “raises a red flag.” Pugh, who acquired rival jeansmaker Blue Bell in 1986 and calls that deal “phenomenal,” would happily borrow to buy another apparel company. But prices, he says, are so horrendous as to jeopardize returns: “And we are not going to leverage ourselves for the sole purpose of not being taken over.”

THE PROSPECT of a takeover may enhance VF in the eyes of investors. But then, the jeans market lacks the vitality it had a few years ago and VF's profits have been under some pressure. So there are questions as to what the company's return on equity will be in the future—as there are also questions hanging over certain other stars. Maytag, for example, has recently paid a bundle to acquire Chicago Pacific and its appliance operation, Hoover. At least for now, Maytag cannot earn on its new investment the returns it has been earning on itself.

At Commerce Clearing House and Deluxe, the uncertainties concern the technology wave, which is slowly rolling in on both businesses. CCH expects soon to be offering electronic versions of its tax reports, and Deluxe, though still printing billions of checks, has acquired companies that process electronic transfers of funds. Dow Jones's experience ought to reassure these companies. The company's flagship *Wall Street Journal* suffered a post-crash hangover last year, earning far less than usual. But profits of the company's information retrieval services rose nicely, vindicating the longstanding belief of Chairman Warren H. Phillips, 62, in the technology revolution.

Tambrands has obviously got management problems to worry about, and millions of eyes will be watching as Claiborne's Chazen moves his act onto the fashion runway. EG&G is even rethinking those 152 businesses. Once almost totally autonomous, many are now getting a dose of centralization. Yes, says Chairman Kucharski, this reorganizing is a wrench for managers, but it is essential if EG&G is to run efficiently.

So changes are in the works and risks abound. But the same could have been said five years ago, when FORTUNE was looking at its first batch of stars. Kellogg was then losing market share, and Merck was going through a dry spell in R&D. Both companies subsequently boomed—and so did their stocks. The point, it seems, is that stars have a way of blazing all over again.

CEOs GIRD FOR GLOBAL BATTLE

Never mind trade barriers and taxes. In the latest FORTUNE 500/CNN Moneyline CEO Poll, big business chiefs say they'll conquer with quality and productivity. ■ *by Brian Dumaine*

WHO'S TO BLAME for America's past setbacks in world business competition? The nation's top CEOs say nobody but themselves. Mostly refusing to point fingers at external forces like trade regulations and tax laws, they believe their best bet for improving global competitiveness is improving quality and productivity in their own corporations. While many American industries have already made impressive strides against foreign rivals (see "The U.S. Gets Back in Fighting Shape"), executives think further advances won't happen fast. CEOs overwhelmingly do not expect the trade deficit to decline significantly over the next 12 months.

"Strong foreign competition incites us all to higher performance."

STANLEY GAULT
Rubbermaid

ANDY FREEBERG

These are among the principal results of the latest FORTUNE 500/CNN Moneyline CEO Poll. Clark Martire & Bartolomeo, an independent opinion research firm, conducted the survey from March 15 to 23. Respondents were 200 CEOs of FORTUNE Industrial 500 and Service 500 companies.

The CEOs' comments showed how extensively the quality gospel has taken hold in U.S. business. When asked what steps U.S. industry should take to improve its world competitiveness, 30% said improving product quality was most important, and others gave it runner-up status. William Ruckelshaus, CEO of Browning-Ferris, sees quality as vital: "It has slipped in the past, and that has been responsible for some of the decline in world trade. The quality of our products and services must be the highest in the world." Westinghouse CEO John Marous believes quality must pervade the corporation. "We need to adopt a total quality culture," he says. "We're not looking for a 10% to 20% improvement. We need a quantum jump."

Despite impressive recent gains in U.S. productivity, 29% of chiefs said improving it further should get first priority. How to do that? Mainly by focusing on cost cutting, automation, and that old standby, participative management. Says Owens-Corning Fiberglas CEO William Boeschenstein: "We need better teamwork, better direction, and better communication."

Some manufacturing executives object to what they consider a highly unproductive U.S. service sector, including the legal and finance firms they have to deal with daily. Says David Roderick of USX: "A problem is the services we are required to purchase. The service sector is insensitive to getting its costs down." Pfizer chief Edmund Pratt has a tempting, if impractical, solution to part of the problem. "Between lawyers defending us from takeover bids and lawyers defending us against myriad suits, I think we'd better send two-thirds of our lawyers to Japan—though they couldn't use them," he says. "None of these things exist there, and that gives the Japanese a competitive edge."

Some CEOs do call for help from Washington. Says John Walter of R.R. Donnelley & Sons: "Competition and foreign trade are all healthy and good, but tax laws and incentives should be equally fair to all." Others cite America's tendency to spend rather than save—and blame it on government policy. Says Vista Chemical's John Burns: "We must change tax laws to increase savings to produce capital investment."

John Woodhouse, CEO of Sysco Corp., advocates letting corporations pool resources on important research projects. "The cost of scientific development, especially in biochemistry and physics, is so horribly high that no one American company is likely to take the risk," he says. While many foreign countries allow corporations to form scientific consortiums that spread

Q **Has foreign ownership of U.S. companies gone too far?**

A

Yes	**13%**
No	**86%**
Not sure	**1%**

Q **Is America better off, worse off, or mainly unaffected if it buys increasing amounts of basic industrial products from low-cost overseas manufacturers?**

A

Better off	**42%**
Worse off	**35%**
Unaffected	**19%**
Not sure	**4%**

Q **Assuming U.S. trade policy remains unchanged, do you expect the trade deficit to decline significantly in the next 12 months?**

A

Yes	**24%**
No	**75%**
Not sure	**1%**

REPORTER ASSOCIATE *Carrie Gottlieb*

"America's cultural diversity is a major advantage in the long run."

RAND ARASKOG
ITT

ANDY FREEBERG

"We're fooling ourselves if we think a lower dollar is the answer to the trade deficit."

W. RUCKELSHAUS
Browning-Ferris

KATHERINE LAMBERT

the cost of making new products, American antitrust laws can deny U.S. companies that opportunity.

Not many CEOs consider the crisis in American education the most urgent competitive issue, but all agree much needs to be done. Says Westinghouse's John Marous: "It won't be long before more than 30% of our population will be illiterate, and certainly that cannot allow us to be competitive worldwide."

A popular explanation of Japan's economic success holds that the country's monolithic culture gives it a unity of purpose that culturally diverse America can never match. Most CEOs don't buy it. Martin Walker, CEO of chemical maker M.A. Hanna, emphatically states, "There's no natural reason we can't produce as well as the Japanese. Mostly it's an unwillingness to apply the right technology and to get our workers involved in the process." Some, like ITT CEO Rand Araskog, believe the makeup of the American work force is a plus: "It's a help in terms of new ideas and flexibility. The cultural diversity of America is a major advantage in the long run."

Nor is there much sense of alarm among the CEOs about foreign takeovers of U.S. companies, with nearly nine out of ten saying foreign ownership has *not* gone too far. Rubbermaid CEO Stanley Gault explains, "As long as we're free to buy into their countries, they should be allowed to buy into ours. I think good strong foreign competition incites us all to higher performance." For the most part, executives tend to see foreign investment as an expression of faith in the U.S. economy.

Another often heard worry arises from low-cost manufacturers around the world taking over markets for basic industrial products. The trend doesn't bother most of the CEOs. Some 42% of those polled believe that American industry is *better off* using more low-cost foreign suppliers, and another 19% say it basically doesn't matter whether the source is onshore or off. As Ruckelshaus argues, "I think our manufacturing companies should use suppliers that produce the best goods at the lowest prices, whether foreign or U.S. If we can't do that, we can't compete."

Q **Is the diverse nature of U.S. society a help, a hindrance, or not much of a factor in competing against the more monolithic Japanese society?**

A

Help	**33%**
Hindrance	**38%**
Not a factor	**26%**
Not sure	**3%**

DESPITE their basic optimism and America's improving competitiveness, few of the top CEOs expect the U.S. trade situation to improve anytime soon. Three out of four think the trade deficit will not decline significantly in the next year. Their opinion runs contrary to the Blue Chip Economic Indicators, a survey of 51 top forecasters, which predicts a hefty 21% year-to-year decline in the trade deficit in the final quarter of 1989.

The executives cite several reasons for their low expectations. America's top exporters—commercial aerospace and chemical companies among them—are already running close to capacity. They won't be able to increase production enough this year to meet growing international demand. Believing the dollar to be fairly valued, the CEOs don't think a further devaluation would help boost exports. Says Ruckelshaus: "We're fooling ourselves if we think a lower dollar is the answer to the trade deficit."

Beyond those considerations, Rohr Industries CEO Harry Todd points out that the trade deficit isn't likely to shrink dramatically until American companies begin to think more globally. Says he: "We make too many excuses rather than tailor our products to serve foreign markets." Critics of American industry say one reason the Japanese don't buy U.S. cars is that most models are too wide for the streets and the steering wheels are on the left side instead of the customary right. Warns 3M CEO Allen Jacobson: "Don't think you can retail everywhere in the world, especially with products that have been developed for the U.S. market."

"It won't be long before more than 30% of our population will be illiterate."

JOHN MAROUS
Westinghouse

KEN KOBRE

Despite America's progress toward world competitiveness in recent years, the battle is not won—and never will be. William Esrey, CEO of United Telecommunications, speaks for many of the CEOs polled when he says, "We always want more for less. But there are others who are hungrier and willing to work better for their rewards—and consequently they produce better for less." A lesson to keep close to heart as the 21st century dawns. ■

Q **What are the most important steps U.S. industry can take to improve its world competitiveness?**

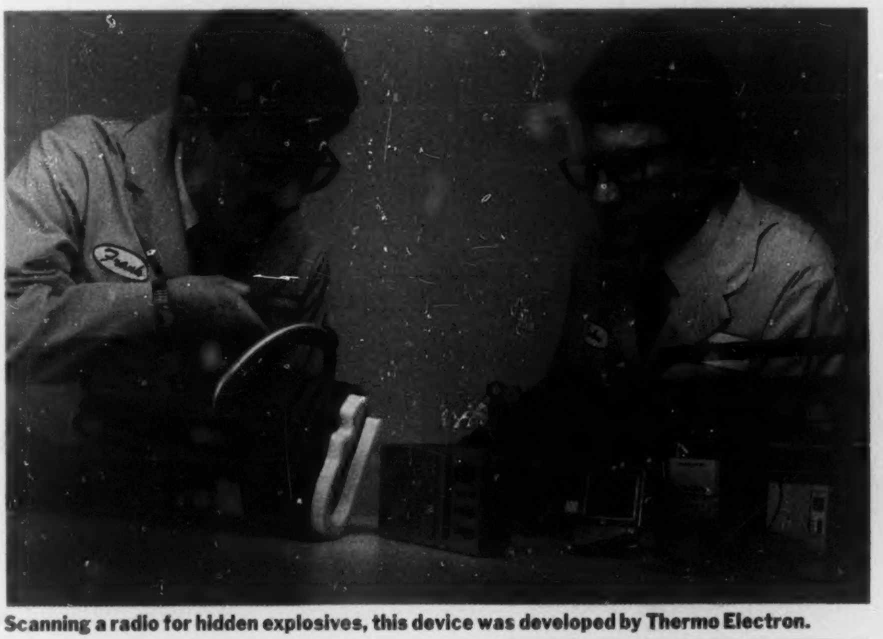
A

Improve quality	**30%**
Improve productivity	**29%**
Increase R&D, modernize plants	**21%**

Other responses include: Lower costs, improve training, reduce regulation

GROWING FAST ON THE 500's FRINGE

These rising companies are good bets to leave the farm team for the major leagues. From across the U.S., they have little in common but a penchant for superexpansion. ■ *by Peter Nulty*


TOBEY SANFORD

Scanning a radio for hidden explosives, this device was developed by Thermo Electron.

THE FORTUNE 500 is a uniquely dynamic roster. Membership and rankings are good for only one year. Popularity among one's peers counts for nothing. There is no blackball, no ruling clique, no tenure. This makes membership both democratic and glorious—and as hard to hang on to as a greased pig.

Such perils only whet the appetites and quicken the blood of the FORTUNE 500 farm team—those fast-growing midsize companies that see membership within their sights. Can they make it in another year, or will it take two? The way these guys view the 500, every company that goes hurtling into the abyss represents an opportunity to move up.

Witness, for instance, the fate of Allis-Chalmers. After divesting three divisions in a Chapter 11 restructuring last year, Allis skidded all the way from No. 394 on the list to No. 573 *off* the list in one year, a fall of 179 places. Envirodyne Industries lost its place near the bottom of last year's list even though it increased sales 3% in 1988. The company was left in the dust when the cutoff for the list leaped from $450 million to $500 million, a gain of 11%.

Seven members of last year's farm team have clawed their way onto this year's FORTUNE 500, paced by Valmont Industries, a manufacturer of steel poles and tubing that advanced from third place on the farm team to No. 415 in this year's directory.

The 25 members of this year's farm team are a diverse bunch. Some were born in the last century, others are offspring of the 1980s. Some are growing by acquisition, others by internal investment. Some manufacture recognizable products such as traffic lights, personal computers, or underwear. Others prefer the mysteries of paper machine clothing or composite honeycombs.

One common feature that distinguishes this team, however, is speed. The group is growing significantly faster than last year's, reflecting the rejuvenation of smokestack America. Median growth for the 1989 team, compounded over the past three years, is 23%. Last year the median was 14%. The slowest member on the list, Albany International (15% growth), is expanding at twice the speed of last year's slowest.

FLEETEST OF ALL is Mark IV Industries, a conglomerate based near Buffalo, New York, that has been expanding by more than 100% a year through acquisitions. The strategy at Mark IV is to manufacture specialized industrial products in market niches so narrow that few competitors are vying for the field. The company now has over 30 divisions making everything from traffic lights to fan belts to garden hoses.

Mark IV may stand the best chance of joining the FORTUNE 500 next year. Last October the company acquired Armtek, which had $1.2 billion in sales in a fiscal year that ended on September 30. Since Armtek had finished its 1988 fiscal year one day before the acquisition was completed, Armtek appears on this year's list as an independent company, No. 301. The combined sales of the two companies, after some divestitures, will be around $1.3 billion. This should catapult Mark IV into the middle of the 500 a year from now, assuming of course that something monumental, such as a takeover, doesn't occur between now and then.

If the FORTUNE 500 were the FORTUNE 501, Thermo Electron would already be a member of the club. Thermo Electron was founded by George Hatsopoulos, a former professor of thermodynamics at Massachusetts Institute of Technology and current

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REPORTER ASSOCIATE *J. B. Blank*

chairman of the Federal Reserve Bank of Boston (see Investing). Hatsopoulos's strategy for growth is straightforward, if not easy to execute: Read the newspapers to identify society's long-term problems and then engineer devices that help solve those problems. The company's product list looks like a first-aid catalogue for modern industrial ills. Thermo Electron makes such items as co-generators, hazardous waste incinerators, radiation detectors, and air pollutant detectors. Right now the company is putting the finishing touches on an explosives detector the airlines might find useful.

HATSOPOULOS'S plan is working well. The company grew 31% last year, although Hatsopoulos warns that the most recent spurt may not be sustainable at quite that level. In the early 1980s he saw a number of potentially lucrative problems developing and "drove earnings to zero," as he says, in order to develop new products (such as the explosives detector) that are now coming on line. Thermo Electron's R&D costs last year equaled an impressive 8.5% of sales. It is a testament to the company's record and prospects that a share of Thermo Electron stock costs roughly $20, or 16 times earnings.

Thermo Electron's strategy for growth: Identify society's long-term problems and engineer solutions.

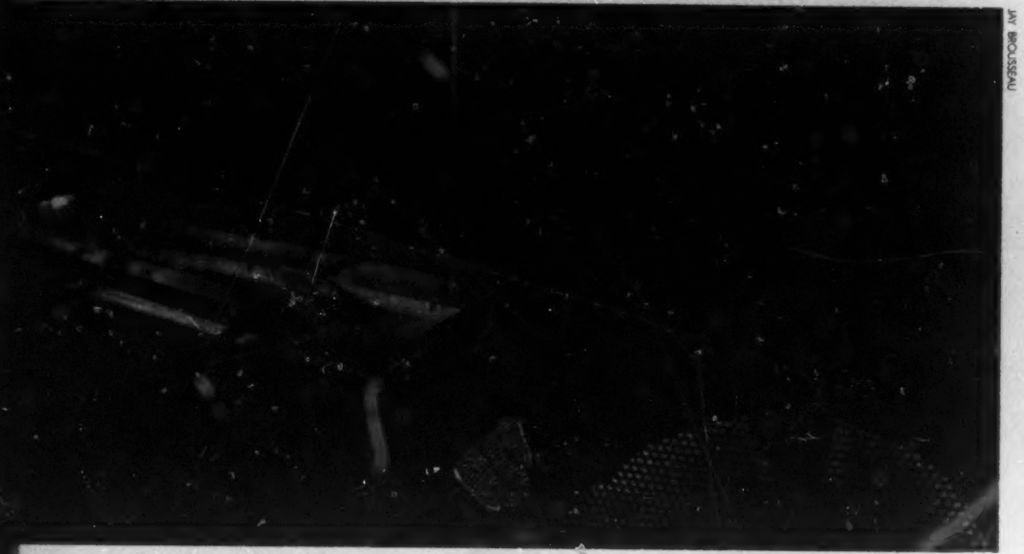
Delta Woodside Industries is an aggressive upstart in an old-timer's industry. The textile company was founded in Greenville, South Carolina, in 1984 by a former executive of Riegel Textile, Erwin Maddrey, 48, and a lawyer, Bettis Rainsford, 38. "We're mavericks," says Maddrey. "We think textiles is a good business. People are gonna wear clothes." Delta focuses mainly on producing textile material rather than finished clothing because the cost of labor, America's disadvantage, is greater in finished products. The clothing the company does make is of the commodity variety, such as underwear and Duckhead-brand khaki trousers popular in the Southeast.

Maddrey and Rainsford have built Delta by acquiring factories from other textile makers when the cyclical business is at its lowest. "When they think there's no tomorrow, we can buy for much less than book value," says Maddrey. Delta bought no factories in 1988 because the textiles industry is in an upswing and prices are high. Sales still advanced from $417 million to $488 million, a nifty 17% over 1987.

AST Research was founded in 1982 by three immigrant computer engineers who figured they might capitalize on the deficiencies of IBM's PC. Albert Wong and

FAST-GROWING COMPANIES REACHING FOR THE 500

COMPANY	PRINCIPAL PRODUCTS	1988 SALES $ Thousands	1988 NET INCOME $ Thousands	1985-88 AVERAGE ANNUAL SALES GROWTH
THERMO ELECTRON (Waltham, Mass.)	Environmental instruments	$500,604	$20,148	23.5%
NEWMONT MINING (Denver)	Gold, coal	$500,092	$174,851	26.1%
WHITTAKER (Los Angeles)	Chemicals, electronics	$499,104	$23,055	17.4%
NORTHWESTERN STEEL & WIRE (Sterling, Ill.)	Metals	$496,848	$29,125	24.0%
HELENE CURTIS INDUSTRIES (Chicago)	Cosmetics	$488,932	$10,832	20.2%
DELTA WOODSIDE INDUSTRIES (Greenville, S.C.)	Textiles, apparel	$488,568	$41,452	73.0%
ENVIRODYNE INDUSTRIES (Chicago)	Food packaging	$488,366	$48,237	112.9%
LA-Z-BOY CHAIR (Monroe, Mich.)	Furniture	$486,793	$26,481	19.9%
FLORIDA STEEL (Tampa)	Steel	$476,243	$19,699	18.3%
HARMAN INTERNATIONAL (Washington)	Electronics	$468,184	$12,018	38.1%
QUANEX (Houston)	Steel	$462,916	$18,473	16.0%
ALBANY INTERNATIONAL (Albany, N.Y.)	Textiles	$461,246	$36,258	15.2%
WYSE TECHNOLOGY (San Jose, Calif.)	Computers	$456,571	$27,978	56.2%
LOCTITE (Hartford)	Chemicals	$416,880	$41,900	21.7%
PRECISION CASTPARTS (Portland, Ore.)	Aerospace castings	$414,441	$36,777	41.6%
AST RESEARCH (Irvine, Calif.)	Computers	$412,721	$15,071	43.9%
ACME STEEL (Riverdale, Ill.)	Steel	$412,453	$30,982	19.8%
FLORIDA ROCK INDUSTRIES (Jacksonville, Fla.)	Building materials	$409,134	$29,329	18.3%
AVX (Great Neck, N.Y.)	Electronics	$408,939	$27,563	31.8%
MARK IV INDUSTRIES (Williamsville, N.Y.)	Electronics	$402,992	$17,041	118.6%
HEXCEL (San Francisco)	Industrial honeycomb	$399,180	$16,135	19.3%
CLEVELAND-CLIFFS (Cleveland)	Iron ore	$393,300	$44,700	18.3%
PLY-GEM INDUSTRIES (New York City)	Building materials	$383,699	$15,850	32.1%
LADD FURNITURE (High Point, N.C.)	Furniture	$379,904	$24,605	15.4%
CLABIR (Greenwich, Conn.)	Food, electronics	$340,920	($162,279)	113.2%



JAY BROUSSEAU

A worker at Hexcel Corp. inspects fiberglass honeycomb for aircraft engine casings.

Tom Yuen from Hong Kong and Safi Qureshey from Pakistan started out making an add-on board called the Six Pack Plus to give IBM's PC more power and memory. The Six Pack was no small beer, carrying AST to over $100 million in annual revenues within three years.

In 1986 the trio, who are now American citizens and all thirtysomething, began building IBM clone computers. They produce eight models, which they market mainly to corporate customers. Annual sales growth in the past three years has been nice to compute: 44%. In the time-honored way of, computer whiz kids, Wong resigned recently to think and enjoy life. His 17% of the stock is worth about $15 million. Oh yes, AST stands for Albert, Safi, and Tom.

Riding high in IBM's wake are AST clonemakers Yuen and Qureshey.

DAVID STRICK—ONYX

Hexcel Corp. of San Francisco is reigning queen of the honeycomb industry (industrial honeycomb, that is) with about 65% of the market. Honeycomb is a strong, lightweight structural material made up of hexagonal cells usually formed into panels. A crude variety of metal honeycomb was used in radar domes during World War II. The company, whose name is short for hexagonal cell, was founded in 1948 to exploit the first machines that could mass-produce the stuff. The company's earliest product was used in B-36 bombers.

Honeycomb has since become a staple of the aerospace industry as filler in the floors, wings, doors, and cabin partitions of aircraft. The company's recent growth rate of 19% a year may slow somewhat as military spending tapers off, but commercial aviation is beginning a new capital-spending cycle to replace aging fleets. Boeing is a particularly large customer, accounting for 20% of Hexcel's sales, and its newly popular 767 aircraft is the largest user of honeycomb ever. Hexcel's engineers are researching new uses for honeycomb, for example in autos and mass transit vehicles. The company has also branched into manufacturing graphite composite materials used in aircraft as well as sports equipment like tennis rackets. Busy as bees, they are.

ALBANY INTERNATIONAL is a renascent offspring of the great downsizing and LBO craze of the 1980s. The company began in 1895, producing the felt material known as paper machine clothing that paper pulp rests on as it rolls through the paper mill. Later Albany wandered into such businesses as tennis ball covers and plastic tubes. In 1983 a management group led by J. Spencer Standish acquired the company in a leveraged buyout, stripped it down to the paper machine clothing business, then took it public again in 1987.

Today the material on which paper rolls through the mills is made from synthetic cloth rather than felt, and Albany International is the world's largest producer, with about 20% of the market. Demand for paper machine clothing is directly related to the volume of paper production since the cloth wears out about every 30 days. With U.S. paper manufacturing growing about 3% a year, Albany's future might seem limited, so the company has been stealing market share from competitors by aggressively researching new products. One fabric, for example, cuts the downtime necessary for changing a paper machine's clothes from eight hours to one. The company's research and development budget was about 3% of sales last year, unusually high for a firm in that industry.

The urge to diversify springs eternal. In the course of their research, Albany International's chemical engineers came up with a synthetic goose down that will soon be marketed under the name Primaloft. "Some of us wanted to call it Goosetex, but we were voted down," says Charles Buchanan, the company's corporate secretary and vice president. Buchanan thinks that with expanding market share and new products, Albany International could continue to increase sales and earnings about 15% a year. F

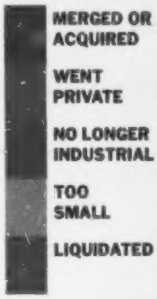
A NEW ERA OF RAPID RISE AND RUIN

Modern business has never seen anything like it: In just five years well over 100 companies have been replaced on the FORTUNE 500. Here's where they went. ■ *by John Paul Newport Jr.*

UNLIKE OTHER progeny of the 1950s, the 35th FORTUNE 500 has not succumbed to yuppielike predictability. On the contrary, our annual list has never displayed more surprise and volatility than in the period just past. Of the 500 corporations included in the rankings five years ago, 143—or nearly 30%—are missing from this year's tally. By comparison, during the 500's entire first quarter-century (1955-80), only 238 companies dropped out.

Of course, not many of these displaced companies have actually vanished. Of the 1983 group, only Uniroyal, Household Manufacturing, and American Bakeries have been formally liquidated as corporate entities. The rest, in one guise or another, are still doing business. Twenty-three companies, including relative biggies like Allis-Chalmers and Lone Star Industries, shrank or didn't grow fast enough to retain their status among the elite 500. Sixteen others, including AT&T and Gulf & Western, altered the nature of their businesses sufficiently to make them ineligible for the list. (Companies must derive more than 50% of their sales from manufacturing or mining to qualify. Otherwise, they are eligible for one of FORTUNE's Service 500 lists.)

WHERE THEY WENT



But by far the biggest reason for the hectic shuffling among America's mightiest industrial companies is the decade's epidemic of dealmaking. More than 100 of 1983's FORTUNE 500 have since been acquired, merged, or taken private. Most of those—67 companies in all—now churn out steel or pump oil as part of other companies on the 500. The size of

REPORTER ASSOCIATE *Darienne L. Dennis*

THE PAST FIVE YEARS' DEPARTURES FROM THE FORTUNE 500

1983 RANK		LAST APPEARANCE	
11	GULF OIL	1983	Acquired by Chevron (1988 rank: 11)
20	ITT	1987	Reclassified as Diversified Service
24	GETTY OIL	1983	Acquired by Texaco (rank: 8)
25	STANDARD OIL (OHIO)	1987	Acquired by British Petroleum; renamed BP America
26	AT&T TECHNOLOGIES	1983	Became part of AT&T listing
33	DART & KRAFT	1987	Renamed Kraft (1986); acquired by Philip Morris (rank: 10)
40	UNION PACIFIC	1983	Reclassified as Diversified Service
41	GENERAL FOODS	1985	Acquired by Philip Morris (rank: 10)
54	SIGNAL COS.	1984	Acquired by Allied; renamed Allied-Signal (rank: 29)
56	NABISCO BRANDS	1984	Acquired by R.J. Reynolds; renamed RJR Nabisco (rank: 20)
61	CHARTER	1983	Reclassified as Diversified Service
66	SPERRY	1985	Merged with Burroughs to form Unisys Corp.(rank: 38)
67	GULF & WESTERN INDUSTRIES	1984	Reclassified as Diversified Service
68	CONTINENTAL GROUP	1983	Acquired by Peter Kiewit Sons'
88	ESMARK	1983	Acquired by Beatrice (rank: 57)
95	FIRESTONE TIRE & RUBBER	1987	Acquired by Bridgestone (Japan)
105	AMERICAN MOTORS	1986	Acquired by Chrysler (rank: 7)
116	CARNATION	1983	Acquired by Nestle (Switzerland)
117	AMERICAN CAN	1985	Reclassified as Diversified Financial; renamed Primerica
122	CELANESE	1986	With American Hoechst formed Hoechst Celanese (rank: 78)
132	NATIONAL INTERGROUP	1984	Reclassified as Diversified Service
136	NORTON SIMON	1983	Acquired by Esmark; now part of Beatrice (rank: 57)
140	KAISER ALUMINUM & CHEMICAL	1987	Renamed Kaisertech; acquired by Maxxam (rank: 485)
141	ST. REGIS	1983	Acquired by Champion International (rank: 91)
143	LEVI STRAUSS	1985	LBO by management
144	CROWN ZELLERBACH	1985	Acquired by James River Corp. of Virginia (rank: 92)
145	REPUBLIC STEEL	1983	Acquired by LTV (rank: 56)
155	SINGER	1987	LBO; spun off manufacturing units to SSMC (rank: 414)
161	KIDDE	1986	Acquired by Hanson Industries NA (rank: 67)
172	WILLIAMS COS.	1983	Reclassified as Utility
175	MCGRAW-EDISON	1984	Acquired by Cooper Industries (rank: 107)
178	WHITE CONSOLIDATED INDUS.	1985	Acquired by Electrolux (Sweden)
179	AVCO	1984	Acquired by Textron (rank: 61)
180	UNIROYAL	1985	LBO led by Clayton & Dubilier; liquidated
186	J.P. STEVENS	1987	Acquired by West Point-Pepperell (rank: 195)

continued

these intramural deals has ranged from Chevron's $13 billion acquisition of Gulf (No. 11 in 1983) to USG's $380 million takeover of Masonite (No. 499).

The period under consideration coincides almost exactly with the run-up in merger and acquisition activity. According to W.T. Grimm, a Merrill Lynch subsidiary in Schaumburg, Illinois, the value of M&A deals announced in the U.S. from 1984 through 1988 totaled $886 billion. That is almost three times the value of deals done in the previous five years. The number of transactions greater than $1 billion, those most likely to involve FORTUNE 500 companies, exploded from 36 in the earlier period to 162 in the past five years.

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The long economic expansion that began after the 1982 recession gave many chief executives the confidence and cash flow they needed to risk making outsize acquisitions. The advent of Michael Milken and his junk bond juggernaut helped. No matter what history ultimately decides about the Drexel Burnham Lambert wizard, just indicted on racketeering and insider-trading charges, few can deny his genius in establishing high-yield debt as the preferred means for funneling big bucks to big deals overnight.

WHERE THEY WENT

- MERGED OR ACQUIRED
- WENT PRIVATE
- NO LONGER INDUSTRIAL
- TOO SMALL
- LIQUIDATED

Bulging war chests and a benign economy would not have spurred so manic an M&A craze if the Reagan Administration's antitrust policy had not been so relaxed. In industry after industry—food, energy, communications, transportation—executives began to fear that only a handful of the biggest companies would survive. It was eat or be eaten. An alternative response to the pressure

1983 RANK		LAST APPEARANCE	
187	OGDEN	1985	Reclassified as Diversified Service
188	STERLING DRUG	1987	Acquired by Eastman Kodak (rank: 18)
193	SCM	1985	Acquired by Hanson Industries NA (rank: 67)
196	SUPERIOR OIL	1983	Acquired by Mobil (rank: 6)
198	GOULD	1987	Acquired by Nippon Mining (Japan)
206	CHESEBROUGH-POND'S	1987	Consolidated into Unilever U.S. (rank: 63)
207	A.E. STALEY MANUFACTURING	1986	Renamed Staley Continental (1985); reclassified as Service
210	NATIONAL CAN	1984	Acquired by Triangle Industries (rank: 111)
214	HAMMERMILL PAPER	1985	Acquired by International Paper (rank: 42)
221	KOPPERS	1987	Acquired by Beazer (Britain)
223	LEVER BROTHERS	1987	Consolidated into Unilever U.S. (rank: 63)
230	ALUMAX	1986	Acquired by Amax (rank: 117)
235	MARMON GROUP	1985	Pritzker family redeemed outstanding public stock.
236	LEAR SIEGLER	1986	LBO led by Forstmann Little
239	NL INDUSTRIES	1987	Acquired by Valhi (rank: 188)
244	ANDERSON CLAYTON	1986	Acquired by Quaker Oats (rank: 88)
249	STAUFFER CHEMICAL	1984	Acquired by Chesebrough-Pond's; subsequently sold
250	MONFORT OF COLORADO	1986	Acquired by ConAgra (rank: 44)
252	MOBAY CHEMICAL	1985	Consolidated into Bayer USA (rank: 99)
253	ALLIS-CHALMERS	1987	Emerged from Chapter 13 (1988) as a smaller company
258	BLUE BELL	1983	LBO; subsequently acquired (1986) by VF (rank: 170)
267	HUGHES TOOL	1986	With Baker International formed Baker Hughes (rank: 184)
268	G. HEILEMAN BREWING	1986	Acquired by Bond Corp. Holdings (Australia)
276	RICHARDSON-VICKS	1985	Acquired by Procter & Gamble (rank: 15)
277	MILES LABORATORIES	1985	Consolidated into Bayer USA (rank: 99)
282	BOC	1984	Consolidated into BOC Group (Britain)
283	U.S. INDUSTRIES	1983	Acquired by Hanson Industries NA (rank: 67)
284	TRANE	1983	Acquired by American Standard (rank: 123)
293	THOMAS J. LIPTON	1987	Consolidated into Unilever U.S. (rank: 63)
295	NVF	1986	Steel subsidiary entered Chapter 11 (1987)
296	G.D. SEARLE	1984	Acquired by Monsanto (rank: 51)
297	CHROMALLOY AMERICAN	1986	Acquired by Sun Chemical; renamed Sequa (rank 210)
303	AMF	1984	Acquired by Minstar (rank: 486)
308	EX-CELL-O	1985	Acquired by Textron (rank: 61)
312	GENERAL CINEMA	1987	Reclassified as Retailing
313	LONE STAR INDUSTRIES	1987	Sold assets, reducing sales
325	CLUETT PEABODY	1985	Acquired by West Point-Pepperell (rank: 195)
336	BROCKWAY	1987	Acquired by Owens-Illinois (rank: 129)
337	CBI INDUSTRIES	1985	Reclassified as Diversified Service
340	HOUSEHOLD MANUFACTURING	1987	Split into three subsidiaries by Household International
342	REXNORD	1986	Acquired by Banner Industries (rank: 473)
345	TODD SHIPYARDS	1985	Entered Chapter 11 (1988)
349	ANCHOR HOCKING	1986	Acquired by Newell (rank: 338)
351	HOOVER UNIVERSAL	1984	Acquired by Johnson Controls (rank: 144)
353	KANE-MILLER	1983	Controlling families bought in outstanding stock.
356	CAPITAL CITIES COMMUNICATIONS	1985	Reclassified as Diversified Service
359	NATIONAL STARCH & CHEMICAL	1987	Consolidated into Unilever U.S. (rank: 63)
360	MIDLAND-ROSS	[illegible]5	LBO led by Forstmann Little
361	MAGIC CHEF	1985	Acquired by Maytag (rank: 216)
362	REICHHOLD CHEMICALS	1986	Acquired by Dainippon Ink & Chemicals (Japan)
366	SCOVILL	1984	Acquired by First City Industries
368	NI INDUSTRIES	1983	Acquired by Masco (rank: 175)
370	NEWMONT MINING	1987	Sold $1 billion of assets, reducing sales
371	DAYCO	1986	Acquired by M.A. Hanna (rank: 330)

continued

was for executives to take their companies out of play by going private. Fifteen companies from the 1983 lineup, including Levi Strauss and Singer, dropped off the list through such action. A number of others, such as Beatrice, also went private but stayed on the 500 because they issue public debt and therefore must file public financial statements.

The weakening U.S. dollar during the past five years made U.S. companies vulnerable to transoceanic assault as well. Altogether 20 members of the 1983 list disappeared into the maw of foreign companies. Half of those went to British acquirers. The U.S. subsidiary of Unilever folded five former 500 companies into its operations (Stauffer Chemical, Chesebrough-Pond's, Lever Brothers, Thomas J. Lipton, and National Starch & Chemical), while Hanson's North American subsidiary picked up three U.S. businesses (Kidde, SCM, and U.S. Industries). Perhaps surprisingly, only three companies fell to Japanese invaders: Firestone Tire & Rubber, Gould, and Reichhold Chemicals.

Altogether 20 members of the 1983 list disappeared into the maw of foreign companies. Half of those went to British acquirers.

Managers by now have grown accustomed to this era of acquisitions and constant, wrenching change. Yet possibly the half-decade ahead will not be so tumultuous as the one just ending, at least when it comes to the composition of the 500. A recession, if one sooner or later occurs, would probably dampen enthusiasm as acquirers strained to service some of that debt piled up in better times. Michael Milken is in remission, and arguably the easiest, most sensible deals have been done. All very reassuring. But after the past five years, who would dare to relax? *continued*

WHERE THEY WENT

- MERGED OR ACQUIRED
- WENT PRIVATE
- NO LONGER INDUSTRIAL
- TOO SMALL
- LIQUIDATED

1983 RANK		LAST APPEARANCE	
375	SMITH INTERNATIONAL	1985	Too small
376	PABST BREWING	1984	Acquired by S&P
378	COLLINS & AIKMAN	1986	Acquired by Wickes Cos. (Retailing)
380	SOUTHWEST FOREST INDUSTRIES	1986	Acquired by Stone Container (rank: 122)
382	BADISCHE	1984	Consolidated into BASF (rank: 93)
384	ECONOMICS LABORATORY	1987	Reclassified as Diversified Service
387	HOOVER	1984	Acquired by Chicago Pacific (rank: 250)
390	JOY MANUFACTURING	1987	Renamed Joy Technologies (1987); too small
392	HARCOURT BRACE JOVANOVICH	1987	Reclassified as Diversified Service
394	GENESCO	1983	Reclassified as Diversified Service
395	M/A-COM	1987	Too small
396	KAISER STEEL	1983	Too small
397	SCOTT & FETZER	1985	Acquired by Berkshire Hathaway (rank: 205)
398	IDLE WILD FOODS	1985	Acquired by Union Holdings
402	MEI	1985	Acquired by PepsiCo (rank: 26)
404	SYBRON	1985	LBO led by Forstmann Little
410	COLECO INDUSTRIES	1987	Too small
412	M. LOWENSTEIN	1984	Acquired by Springs Industries (rank: 222)
415	SANDERS ASSOCIATES	1985	Acquired by Lockheed (rank: 33)
416	ACF INDUSTRIES	1983	Acquired by Icahn & Co.
417	GULFSTREAM AEROSPACE	1984	Acquired by Chrysler (rank: 7)
426	NASHUA	1986	Reclassified as Diversified Service
430	MICHIGAN MILK PRODUCERS	1986	Too small
432	DR PEPPER	1983	LBO; merged (1988) into Dr Pepper/Seven-Up (rank: 491)
434	BUCYRUS-ERIE	1983	Too small
438	BANGOR PUNTA	1983	Acquired by Lear Siegler, which went private (1987)
440	DATAPOINT	1985	Too small
444	STOKELY-VAN CAMP	1983	Acquired by Quaker Oats (rank: 88)
445	CESSNA AIRCRAFT	1984	Acquired by General Dynamics (rank: 41)
449	GEORGIA KRAFT	1987	Acquired by Temple-Inland (rank: 200)
452	REVERE COPPER & BRASS	1985	LBO led by Oxford Financial Group
454	ROLM	1984	Acquired by IBM (rank: 4)
457	EASCO	1985	Acquired by Equity Group Holdings
459	ROYAL CROWN COS.	1983	Acquired by Chesapeake Financial
460	AMERICAN BAKERIES	1985	LBO by management; liquidated (1988)
462	ROPER	1987	Acquired by General Electric (rank: 5)
463	COACHMEN INDUSTRIES	1984	Too small
467	PALM BEACH	1984	Too small
468	GUARDIAN INDUSTRIES	1985	LBO by management
469	CECO	1985	LBO by management
471	LIQUID AIR	1987	Company no longer files public figures
477	PRENTICE-HALL	1983	Acquired by Gulf & Western (Diversified Service)
480	WISCONSIN DAIRIES COOPERATIVE	1986	Too small
481	PEABODY INTERNATIONAL	1983	Too small
483	DIEBOLD	1984	Too small
484	HOLLY	1983	Too small
485	HARTE-HANKS COMMUNICATIONS	1987	Went private (1984); returned to 500 (1986); now too small
486	BAIRNCO	1987	Too small
492	OAK INDUSTRIES	1984	Too small
495	TRACOR	1986	Acquired by Westmark Systems
496	MOORE MCCORMACK RESOURCES	1986	Too small
497	HYSTER	1983	Acquired by ESCO
498	RIEGEL TEXTILE	1984	Acquired by Mt. Vernon Mills
499	MASONITE	1983	Acquired and subsequently sold by USG (rank: 152)

WHAT EVER HAPPENED TO THE FORTUNE 500 TOP 50 OF 1954?

1954 RANK		1988 RANK or LAST APPEARANCE		
1	GENERAL MOTORS	1		
2	STANDARD OIL (N.J.)	3		Name changed to Exxon 10/25/72
3	U.S. STEEL	23		Name changed to USX 7/8/86
4	GENERAL ELECTRIC	5		
5	SWIFT		1983	Acquired by Beatrice 7/7/84
6	CHRYSLER	7		
7	ARMOUR		1969	Acquired by Greyhound 12/28/70
8	GULF OIL		1983	Acquired by Chevron 6/15/84
9	SOCONY-VACUUM OIL	6		Name changed to Mobil Oil 5/18/66
10	DU PONT (E.I.) DE NEMOURS	9		
11	BETHLEHEM STEEL	82		
12	STANDARD OIL (IND.)	12		Name changed to Amoco 4/23/85
13	WESTINGHOUSE ELECTRIC	27		
14	TEXAS CO.	8		Name changed to Texaco 5/1/59
15	WESTERN ELECTRIC		1983	Become part of AT&T listing
16	SHELL OIL	13		
17	NATIONAL DAIRY PRODUCTS		1987	Acquired by Philip Morris 12/7/88
18	STANDARD OIL OF CALIFORNIA	11		Name changed to Chevron 7/1/84
19	GOODYEAR TIRE & RUBBER	32		
20	BOEING AIRPLANE	19		Name changed to Boeing 5/2/61
21	SINCLAIR OIL		1968	Merged with Atlantic Richfield 3/4/69
22	INTERNATIONAL HARVESTER	113		Named changed to Navistar International 2/20/80
23	RADIO CORP. OF AMERICA		1982	Moved to Service 500 in 1982
24	UNION CARBIDE & CARBON	50		Name changed to Union Carbide 4/16/57
25	FIRESTONE TIRE & RUBBER		1987	Acquired by Bridgestone* 5/5/88
26	DOUGLAS AIRCRAFT	25		Name changed to McDonnell Douglas 4/28/67
27	PROCTER & GAMBLE	15		
28	REPUBLIC STEEL		1983	Acquired by LTV 6/29/84
29	CITIES SERVICE		1981	Acquired by Occidental Petroleum 12/3/82
30	PHILLIPS PETROLEUM	31		
31	GENERAL FOODS		1985	Acquired by Philip Morris 9/27/85
32	U.S. RUBBER**		1985	Acquired by Clayton & Dubilier 5/6/85
33	BORDEN	59		
34	LOCKHEED AIRCRAFT	33		Name changed to Lockheed 9/30/77
35	ALUMINUM CO. OF AMERICA	40		
36	INTERNATIONAL PAPER	42		
37	WILSON & CO.	276		Name changed to Wilson Foods 10/14/76
38	SUN OIL	48		Name changed to Sun Co. 4/27/76
39	UNITED AIRCRAFT	16		Name changed to United Technologies 5/1/75
40	AMERICAN CAN		1986	Name changed to Primerica 4/28/87†
41	GENERAL DYNAMICS	41		
42	NORTH AMERICAN AVIATION	28		Name changed to Rockwell International 2/16/73
43	EASTMAN KODAK	18		
44	GOODRICH (B.F.)	169		
45	CONTINENTAL CAN		1983	Acquired by Peter Kiewit Sons' 11/1/84
46	BENDIX AVIATION		1982	Acquired by Allied-Signal 1/31/83
47	ATLANTIC REFINING	17		Name changed to Atlantic Richfield 1/3/66
48	INLAND STEEL	116		Name changed to Inland Steel Industries 5/1/86
49	ARMCO STEEL	140		Name changed to Armco 7/1/78
50	ALLIED CHEMICAL & DYE	29		Name changed to Allied-Signal 9/19/85

*FORTUNE 1987 International 500, No. 120. **Name changed to Uniroyal 2/27/67. †FORTUNE 1987 Diversified Financial Companies, No. F-18.

JOHN MARGOLIES—ESTO

Gulf, the highest-ranking company displaced from the 500 in the past five years, was one of the original top ten.

The appearance of two meatpackers, Swift and Armour, among the top ten industrial companies of 1954 shows the age of that list. Otherwise the broad-shouldered giants at the apex of the first FORTUNE 500 are a surprisingly modern bunch. Six of the top ten were the same then as now, and Ford probably would have made it in 1954 had it been public. Only IBM, which has climbed from No. 61 to No. 4 since the original list, would have seemed out of place at the top in the 1950s. Fifteen of the original 50 companies no longer appear, but ten of them were acquired by companies still on the list, all among the top 60. As a group, steel companies have fared the poorest. The four still included on the 500 have tumbled a combined 250 spots. On the overall list, the company that fell the furthest, Wilson & Co., was acquired earlier this year by Doskocil of South Hutchinson, Kansas—of all things, a meat company. F

WHERE THEY WENT

▨ MERGED OR ACQUIRED
▨ WENT PRIVATE
▨ NO LONGER INDUSTRIAL
▨ ON THE 1988 500 LIST

A LATIN DEBT PLAN THAT MIGHT WORK

The Brady proposal lays out a plausible scheme for solving the monstrous problem—but only if the debtor countries clean up their messy economies. That's a big if.

■ *by Jeremy Main*

TREASURY SECRETARY Nicholas Brady has set U.S. policy toward the Third World's mountain of debt on the most promising course yet. Finally there's a chance—slim but real—that the rich and the poor countries can begin to work their way out of a monstrous problem. Yes, the scheme is short on details, but it gives both sides a reason to negotiate, sets limits on what they can expect, and gives everyone with a stake in the outcome freedom to devise creative approaches.

The proposal Brady outlined pushes banks to accept lower payments on increasingly unsafe Latin loans that have been discounted in the money markets to a fraction of their original value. In exchange they would get assurances that the reduced amounts will be paid. Japan and other developed countries would provide fresh capital to the international lending agencies, as well as to the debtor countries. To Latin America the proposal offers the hope of relief from an economic decline that is pushing desperate people to the point of explosion, as it did in Venezuela in February.

Make no mistake: The hard work is only beginning. The most crucial of the missing details is a plan to force economic reform on the debtors, who owe $1.3 trillion. Politicians south of the border like to blame their falling living standards on *yanqui* bankers, but worse damage comes from home-grown problems: overwhelming deficits and inflation, corrupt bureaucracies, and huge, inefficient state enterprises. Even if all the debts were wiped off the books tomorrow, Peru and Bolivia would certainly remain economic basket cases, Argentina probably, and Brazil perhaps.

What makes the plan plausible nonetheless is that borrowers and lenders both have powerful reasons to heed the Brady call. The banks need to end uncertainty and collect what they can. The U.S. and the international agencies will push them to cooperate in giving the borrowers a break. The borrowers desperately need new capital to restart the growth of their economies. They will find it harder than before to resist the demands for reform that will be tied to any help they get. The alternative, the utter disaster of default, looms ever larger.

A SAD SAGA OF BORROWING AND MISMANAGEMENT

COUNTRY	TOTAL DEBT IN 1988 in billions	CHANGE IN TOTAL DEBT SINCE 1982[1]	INTEREST PAID IN 1988 AS A % OF EXPORT EARNINGS	CHANGE IN REAL GDP 1982-88[2]	CHANGE IN PER CAPITA GDP 1982-88[2]
Brazil	$115.2	+34.9%	40.5%	+24.6%	+9.4%
Mexico	$105.0	+19.7%	51.6%	−0.4%	−13.4%
Argentina	$58.4	+33.9%	36.2%	+8.7%	−0.8%
Venezuela	$37.8	+10.9%	33.5%	+1.8%	−13.7%
Peru	$20.5	+66.5%	7.3%	−0.1%	−14.4%
Chile	$19.5	+12.6%	21.5%	+29.1%	+16.6%

[1] Based on average exchange rate for each year. [2] Calculated in local currencies.

SOURCES: DRI/McGRAW HILL

Latin America has been struggling since 1982 to cope with its debt, but the burden of paying interest has contributed to a big drop in personal incomes and slowed economic growth.

PAUL FETTERS

Brady pushed the bankers off a cliff.

Details will emerge on a case-by-case basis as rescue plans are framed for each country. Mexico will be the first up because it needs $4 billion quickly and because it is looked upon favorably by the world's bankers. The new government of President Carlos Salinas de Gortari is highly competent in economic matters, Mexico has done much to free up its economy and considerably more than the U.S. to cut its deficits, and investors find the country promising. Mexico would likely get the fast $4 billion it needs to cover the difference between interest due and its current account earnings under any circumstances. But the Brady plan gives it room to ask for much more. Salinas would like to halve his country's $65 billion in commercial bank loans. He certainly won't get that soon, but Mexico might be able to swap or buy back its loans at, say, a 35% discount or negotiate a reduction in interest rates that would have an equivalent effect.

The banks, instead of holding increasingly unhealthy Mexican paper, will acquire

AP/WIDE WORLD

Rioting and looting greeted the attempts of Venezuela's new President, Carlos Andrés Pérez, to impose the austerity and price increases demanded by foreign creditors.

new bonds backed with either guarantees or informal assurances by the World Bank or the International Monetary Fund. Under the old Baker plan, formulated in 1985 by Brady's predecessor, James A. Baker III, the $4 billion would have been financed by new loans simply added to Mexico's debt burden—with the delusive hope that the Mexican economy could eventually grow big enough to cope with its debt.

A PROTOTYPE of the bond scheme fell short last year when J.P. Morgan organized an auction to exchange debt for 20-year Mexican government bonds secured by zero-coupon U.S. government bonds. Mexico could have swapped up to $10 billion in debt at a 50% discount but exchanged only $3.7 billion at an average of 30%. The auction reduced debt by a disappointing $1.1 billion, not much for a country that owes $105 billion altogether. But a new auction offering guaranteed interest as well as principal could be more successful.

The Brady plan, or something like it, was long overdue. When Mexico unleashed the crisis in 1982 by suspending its loan payments, both the overextended banks and the overborrowed developing countries were gravely threatened. The banks had not set aside reserves for their Third World debt, which amounted to nearly double their equity.

Now most banks are in better shape to take a hit. Over the past couple of years they have built up their reserves (see table, page 212). U.S. money-center banks on average have enough to cover about 30% of their Third World loans, while some European banks are 90% and even 100% reserved. Japanese banks are allowed to reserve no more than 15%, but they are eager to settle anyway so they can start to make major new loans in Latin America and create new export markets. At the same time the loans have become worth less in the world markets where debt paper is traded, mainly by the banks themselves. Mexican debt was recently going for 40 cents on the dollar, Brazilian 32, Argentine 18, Bolivian 9, and Peruvian 3. Chile and Uruguay, whose economies are the soundest, can sell their debt for nearly 60% of face value.

Harvard professor Jeffrey Sachs, who has helped Latin American countries with their debt problems, believes that any American bank could survive a settlement of 50 cents on the dollar and that many would accept that figure to put the problem behind them. The most eager would be smaller banks, which just want to forget about Latin America.

Brady offered a vague promise of help when he proposed reducing and streamlining regulations that hold up debt settlements. For example, U.S. banks can get credits only when an entire loan goes down the drain. European banks, by contrast, can take a tax deduction as soon as they set up a reserve against a shaky loan. L. William Seidman, chairman of the Federal Deposit Insurance Corp., advocates allowing U.S. banks to take tax deductions for partial loan write-offs.

UNLIKE THE BANKS, the borrowers have mostly sunk into increasingly pitiful conditions since 1982. Starved of new capital, hopelessly mismanaged, mangled by inflation that often reached the three- and sometimes four-digit level, they have watched their GNPs and real wages drop. Over the past seven years Latin American countries made a net transfer of $160 billion to the industrialized countries—not including the estimated $300 billion their own citizens have sent abroad for safety.

The Bush Administration might have liked more time to work out the details of a new debt plan, but late last year events began pressing in. Other creditors were becoming impatient for a solution. For fear of losing face and leadership, the U.S. had to dissuade Japan from presenting a detailed debt plan at an economic summit in Toronto last year. (Brady's proposal bears more than a passing resemblance to it.) Then came the Venezuelan riots and the specter of democracy under fire throughout Latin America. The architect of the Brady plan, David Mulford, undersecretary designate for international affairs and a veteran of world banking in and outside the Treasury, shoved the plan through the short-staffed Administration without the usual exhaustive studies and approvals. Says Richard Medley, an international bank consultant in Washington: "Brady pushed the bankers and the debtors off the cliff, hoping someone will put some water in the canyon below before they hit bottom."

Providing the water will be a horrendously complicated task. In Mexico alone, 600 banks will be affected by any settlement. The hardest to persuade will be some

REPORTER ASSOCIATE *Carol Davenport*

of the bigger American banks that lent more aggressively—most notably Citibank—and intend to stay in Latin America in order to go where their customers go. But Brady has made it plain to the banks that reluctant ones may not have the power to veto deals as they have in the past.

These and scores of other issues are the subject of intense and esoteric discussions couched in language so arcane even bankers find them hard to penetrate. Financial leaders speed around the world looking for money and solutions. Mexico's able MIT-trained finance minister, Pedro Aspe, begins a week in Washington negotiating terms of the Brady plan, goes on to Tokyo to line up new capital, and finishes the week in Amsterdam at an international bank meeting. As an intellectual exercise, says a senior World Bank official, dealing with Third World debt "is the most fascinating and challenging thing I have ever done."

WHILE the Brady proposal has laid out the principles of the rescue effort, it leaves room for many types of solutions. More than a score of plans and approaches are ready to be plucked from the brains of the world's bankers and economists.

American Express Chairman James D. Robinson III, for example, has called for an Institute of International Debt and Development to buy up loans at discount rates. The agency—Robinson would nickname it I2D2—would issue bonds backed by the industrial countries, and also preferred shares that would pay dividends if the borrowers' economies got stronger. The Japanese propose to provide up to $10 billion in "parallel" credits to go with funding from international agencies. Pedro-Pablo Kuczynski, chairman of First Boston International and author of a book on Latin debt, believes an equity kicker could get debt relief moving. He argues that loans should be converted at a discount fair to both sides—somewhere between 35% and 45%—but that if the debtors' exports grow to a certain level, then the creditors would be paid more.

Debt-equity swaps add another dish to the menu of solutions. In this type of swap a foreign investor buys the debt at a discount, converts it to local currency, and plows it back into local business or property. That can be anything from a factory to a soccer player—Philips NV acquired the rights to a Brazilian star, Romario Farias, to play for its team in the Netherlands.

Chile has reduced its debt by more than 10% through swaps, partly because Chile's market-oriented economic policies make it attractive to investors. But other Latin Americans are turning against swaps because xenophobes see them as sellouts to foreigners, and governments call them inflationary—which, of course, they are when a government pays for them by printing money, as Argentina and Brazil have done. After making $7.5 billion worth of swaps last year, Brazil suspended the program, and Mexico has done the same. Swaps probably have a useful but limited future.

Rising interest rates made the debtors' burden heavier in recent years, and lower rates would lighten it—but no likely decline will get them off the hook. The possibility floated by the U.S. Treasury of a 20% reduction in debt doesn't excite Latin Americans. Say rates on most American bank loans to Mexico continue to be calculated by adding thirteen-sixteenths to the London Interbank Offered Rate (Libor). In the past year Libor rose nearly four points, to 11%. If Mexico's $65 billion debt to commercial banks was reduced 20% to $52 billion by the sale of bonds or some other swap, interest payments would fall from $7.7 billion to $6.1 billion, nowhere near enough to cover even Mexico's immediate needs. The debt would have to be cut in half to stop Mexico from falling behind. Its payments would also drop to a manageable level if the bankers took a cut in interest rates from the Libor formula to, say, 5% or 6%. Reductions on these scales are unlikely, at least in the first round.

BANKS ARE GETTING STRONGER

BANK	DEVELOPING-COUNTRY LOANS AS A % OF EQUITY, AFTER RESERVES 2nd qtr. 1987	4th qtr. 1988
Manufacturers Hanover	302%	204%
BankAmerica	263%	157%
Chase Manhattan	185%	119%
Chemical Banking	156%	116%
Citicorp	167%	93%
Bankers Trust	133%	86%
Bank of New York	30%	61%
J.P. Morgan	86%	60%
First Chicago	129%	51%

Major U.S. banks with loans amounting to more than 50% of equity.

SOURCE: SALOMON BROTHERS

By adding to reserves and equity, American banks have made themselves less vulnerable to loans that go sour.

MANY STUDENTS of the debt problem feel the cuts will have to be even bigger. Kuczynski of First Boston argues that Latin American commercial bank debt would have to be sliced by a third just to bring interest payments back to their level of early 1988. That would be equivalent to some $86 billion. Business Environment Risk Information, an international consulting group in Washington, D.C., is even more bearish. Like some European banks, it suggests that real help means rates of only 2% or 3%, capitalized over 30 years for the worst cases. But U.S. taxpayers would probably just as soon see those countries go up in smoke as pay for such a giveaway.

Whatever breaks the creditors give Latin America, the performance of the countries themselves will determine whether they get the new capital needed to help them grow out of their misery. Apart from its size and proximity to the U.S., Mexico is the Treasury's current favorite candidate because its economically savvy government is making the right moves. Argentina, on the other hand, offers little reason to attract a new deal. Its government is paralyzed by repeated failure, an election coming up May 14 may produce a demagogue President, and the country is $2 billion in arrears on debt payments.

Most Latin American republics can't even hold on to their own money. The estimated $300 billion in flight capital sent abroad by Latin Americans is more than the total bank credit owed by their countries, now $257 billion. Many of the borrowed dollars went right into hiding in Switzerland or the U.S. before they could make a mark. If the owners of these foreign deposits and investments would repatriate just the interest they earn, Latin America could meet most of its current bills. And if they repatriated the principal, the debtors could settle most of their accounts. But there's no way of forcing the money to come home to malfunctioning economies. No amount of debt reduction and relief will work unless the afflicted countries straighten themselves out. ■

JAPAN'S RISING DEFENSE INDUSTRY

Its military contractors want to waive the rules that ban overseas sales, and some are pressing for more spending at home. Should U.S. companies be worried?

■ *by Carla Rapoport*

MILITARY EXPENDITURES

COUNTRY	1988 est.	1987
	in billions U.S. $	
United States	$307.7	$296.2
France	$35.9	$34.8
West Germany	$35.4	$34.1
Britain	$34.9	$32.8
Japan	$28.9	$24.3

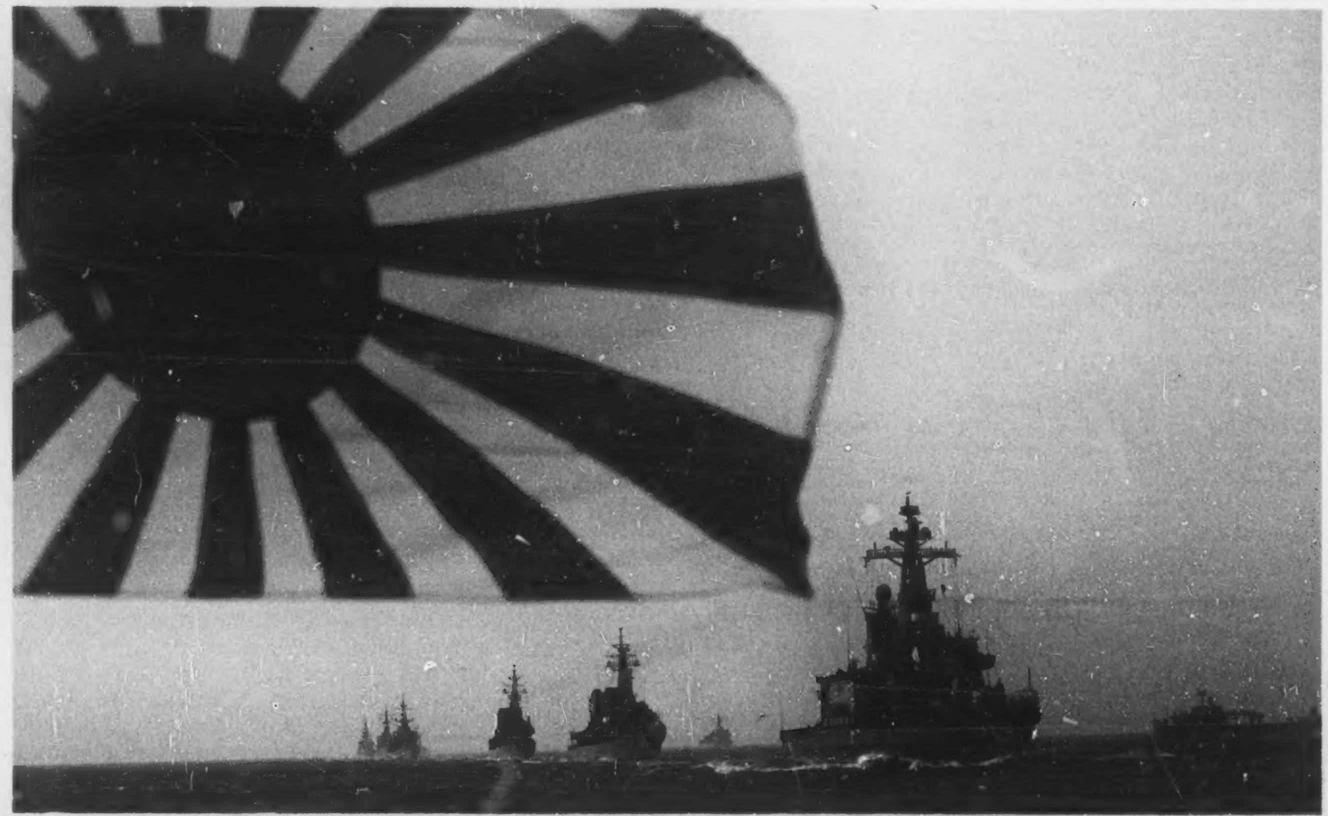
SOURCE: U.S. ARMS CONTROL AND DISARMAMENT AGENCY

WHILE CONGRESS was agonizing over whether to give technology to the Japanese so they can produce a new jet fighter, the debaters missed a much larger point. Japan already has a multibillion-dollar defense industry. More than that, its arms makers are rapidly catching up with the U.S. lead in military technology—and now they want to go global.

You haven't seen Mitsubishi tanks rolling through the world's trouble spots for a good reason. In a burst of pacifism in 1976, the government banned exports of firearms, ammunition, military vehicles, ships, and aircraft. The ban has been weakening in recent years, and it never covered the fast-growing area of electronic components. Some of Japan's largest defense contractors think the restrictions should fade away completely.

Just like the leaders of other Japanese industries, they want higher sales through exports, primarily to the U.S. They also want joint ventures with American defense contractors. According to Kosaku Inaba,

Warships like these near Tokyo Bay unnerve neighbors. Rather than build more, military producers hope to sell smart weapons to the U.S.



PHOTOGRAPH BY ROBERT WALLIS—JB PICTURES

ROBIN MOYER

Long in the tooth? Some of the technology in Japan's F-4 Phantoms goes back to the 1950s.

president of Ishikawajima-Harima Heavy Industries (IHI), a leading defense contractor, the Japanese seek economies of scale so that they can reduce the cost of their own military hardware while increasing research and development. Says he: "Both the U.S. and Japan want to introduce the latest knowledge and best technology in their military equipment. We should use the best of both sides."

THE BAN began eroding in the early 1980s. Japan agreed to sell some of the components and systems it was developing for its own forces, but only to the U.S. The Pentagon sent several teams to see what Japan could provide. At the moment Washington is very interested in (1) a so-called ducted-rocket engine design that theoretically would push a missile faster on less fuel than current models and (2) a new Japanese technique for demagnetizing ships under way to avoid distortions of navigation and other electronic equipment.

American arms makers already depend heavily on Japanese subcontractors for many components, including semiconductor chips for guided missiles and camera lenses used in reconnaissance. Since these products are classified by Japan's ministry of international trade and industry (MITI) as having both commercial and military applications, they do not fall under the export ban. The size of this trade is unknown. The Pentagon says it has no idea how many foreign components are inside the goods it buys, and the Japanese Defense Agency won't say anything at all.

MITI officials insist there will be no further changes in the export rules. Inaba, who also heads Japan's defense contractors' association, isn't so sure. He points out that the ban is not a law but a set of guidelines issued by a previous cabinet. Says he: "I think [the restrictions] must be softened in the future, step by step." His timetable for getting rid of them? Five to ten years.

The Japanese should benefit from the new emphasis on so-called smart weapons based on electronics and superlight, superstrong materials. Electronics companies like NEC, Toshiba, and Mitsubishi Electric feel they can compete on a fairly equal basis with such U.S. defense stars as Hughes and Rockwell.

NEC executives say that attention to detail and quality control makes Japanese companies particularly reliable defense contractors. Hiroshi Nagata, a retired admiral who is now an adviser to NEC, claims that Japan is especially strong in electronic subsystems, used in aircraft or missile controls. Says he: "The reliability of those products produced under license is higher than those of the same products made in the U.S." Knowledgeable Americans privately agree.

JAPANESE COMPANIES have another advantage. Defense contracts make up a small portion of total sales. "If we have an electronics breakthrough on our commercial side that can be applied to defense, we do it," explains an NEC official in Tokyo. A recent study of the U.S. defense industry published by the Aerospace Education Foundation, a private American organization, agrees: "Defense procurement no longer dominates the development of high-technology products. The market is now driven by commercial needs, not by military considerations."

The Pentagon has been aware of this switch for some time, fretting about the steady decline of the U.S. consumer electronics industry. Just 12 years ago, for example, the most powerful memory chips were turned out by nine U.S. companies and four in Japan. Today there are ten Japanese producers and only three in the U.S. John Stern, who represents the American electronics industry in Tokyo, says with a note of bitterness in his voice: "Defense electronics is a very good business for Japan. It's not that the Japanese are rearming or becoming militaristic, but that they know an opening when they see one. We're just hoping that the Pentagon won't turn its back on American industry the way big U.S. retailers did."

At the moment Stern shouldn't lose too much sleep. While Japan's spending on military equipment has more than doubled since 1983, it will be only about $9 billion

TOP TEN DEFENSE CONTRACTORS

UNITED STATES

Year ended 9/30/88

COMPANY	VALUE OF CONTRACTS in millions
McDonnell Douglas	$8,003
General Dynamics	$6,522
General Electric	$5,700
Tenneco	$5,058
Raytheon	$4,055
Martin Marietta	$3,715
General Motors	$3,550
Lockheed	$3,538
United Technologies	$3,508
Boeing	$3,018

SOURCE: U.S. DEPARTMENT OF DEFENSE

JAPAN

Year ended 3/31/88

COMPANY	VALUE OF CONTRACTS in millions
Mitsubishi Heavy Industries	$1,898
Kawasaki Heavy Industries	$1,239
Mitsubishi Electric	$626
Ishikawajima-Harima	$543
Toshiba	$526
NEC	$439
Japan Steel Works	$176
Fujitsu	$161
Komatsu	$153
Hitachi Zosen	$151

SOURCE: JAPAN DEFENSE AGENCY

REPORTER ASSOCIATE *Carrie Gottlieb*

this year, vs. the U.S.'s $81 billion. Japan's expenditures should continue to grow, reaching about $22 billion by the end of the next decade. Even if U.S. spending stayed the same, which is unlikely, Japan would still be far behind.

While size isn't their long suit, the Japanese claim that manufacturing skills are. James Auer, director of U.S.-Japan studies at Vanderbilt University, tends to agree. A nine-year veteran of the Pentagon, he has taken a close look at Japanese techniques for miniaturizing and muffling the sounds of machinery. He believes that Japan can contribute more advanced defense technology than any other U.S. ally. Auer argues that, assuming the Japanese continue to develop their manufacturing and technical skills, the best way to prevent the Russians from gaining military superiority is to "combine the capabilities of the U.S. and Japan."

Along with increased exports and joint ventures, some leading defense contractors want a much bigger industry at home. Typically they say that Japan has a responsibility to spend more on its own defense as well as that of its allies. Says Hiroshi Morikawa, a managing director of Mitsubishi Electric who heads the company's defense business: "Somehow we must pay more. It's like living in a big city but not paying the policeman. It's impossible." He believes the European level of 3% to 4% of GNP should be Japan's goal.

The contractors get plenty of support from abroad. A U.S. congressional committee last year concluded that Japan's defense contributions are inadequate given its tremendous economic strength. The Japanese spend a little over 1% of GNP. Because their economy is so large, that amounts to a lot of money: fifth among Western allies. The U.S. is way out in front in total spending. France, West Germany, and Britain are bunched together, with Japan not far behind them. Military spending as a percentage of GNP is something else. In 1985, the latest year for which data are available, Japan ranked 133rd in the world, behind Uganda and just ahead of Costa Rica.

MOST JAPANESE policymakers insist that the 1% level is not open for discussion, especially when a foreign government wants to do the discussing. And NEC's Nagata, the former admiral, worries about Japan becoming too powerful. "It would affect the military balance in the world," he says. "I don't think we should do it. We might have nuclear weapons and missiles. Do you want that?"

One thing they all agree on: If defense spending does rise, much of it should go into R&D. Government-sponsored R&D has increased fourfold since 1980, but is still only around $700 million. The U.S. spent some $35 billion last year. Still, even at that level, Japan has some advantages. Gallium arsenide chips, used in missiles and radar systems, are mostly made by Japanese companies.

The Japanese defense industry has its critics. There is almost no competitive bidding, and each company tends to keep the same contracts year after year. Says Hisao Iwashima, a former director of Japan's National Institute for Defense Studies: "Everyone has a monopoly in a particular area. Even the defense agency doesn't know the real cost of those weapons."

Why doesn't the government introduce competition? Because the present system suits Japan's high-tech ambitions. According to a study by MIT professor Richard Samuels and his assistant, Benjamin Whipple, "Japanese policymakers in the 1980s have turned to military spending as a mechanism for industrial development." The so-called heavies like Mitsubishi, Kawasaki, and Fuji have been eager participants because they want to continue diversifying.

One current best-seller in Japan is *A Japan Which Can Say No.* Written by Akio Morita, chairman of Sony, and Shintaro Ishihara, a former minister of transport, the book states: "The heart of the world's defense power is in the hands of Japanese high technology." If they're right, it might be wise for the West to share more technology and buy more hardware from Japan. ■

DON'T HOLD YOUR BREATH FOR TOYOTAS IN THE SKY

The refrain goes like this: What they did in cars, consumer electronics, and semiconductors, Japan is now about to do in (fill in the blank). If there is a seductive logic about the idea, it's that no one ever got rich by underestimating the Japanese.

Recently the latest blank has been aerospace, following a proposal pushed hard by the Pentagon—over the objections of Senator Jesse Helms among others—to transfer dated U.S. technology to Japan for a new jet fighter code-named FSX. First the FSX, the critics warn, then thousands of flying Toyotas darkening the skies.

If opponents had done their homework, they would have realized that Japan doesn't need American fighter technology to create its own commercial aerospace industry. U.S. planemakers have been sharing technology with the Japanese for more than ten years. The airframe of the Boeing 767, for example, is made with 15% Japanese parts. The Japanese were in on the 767 from the beginning.

Japan produced its own commercial plane more than 20 years ago, the YS-11 twin-engine turbo jet. It is still flying in Japan but never sold well elsewhere. Today the ministry of international trade and industry, which has designated aerospace a *kiban gijitsu*, or key technology, is working on its next brainchild—the YSX, a 75-seat replacement for the YS-11. The plane will be aimed at developing countries in Asia, as well as commuter routes in Japan, the U.S., and Europe.

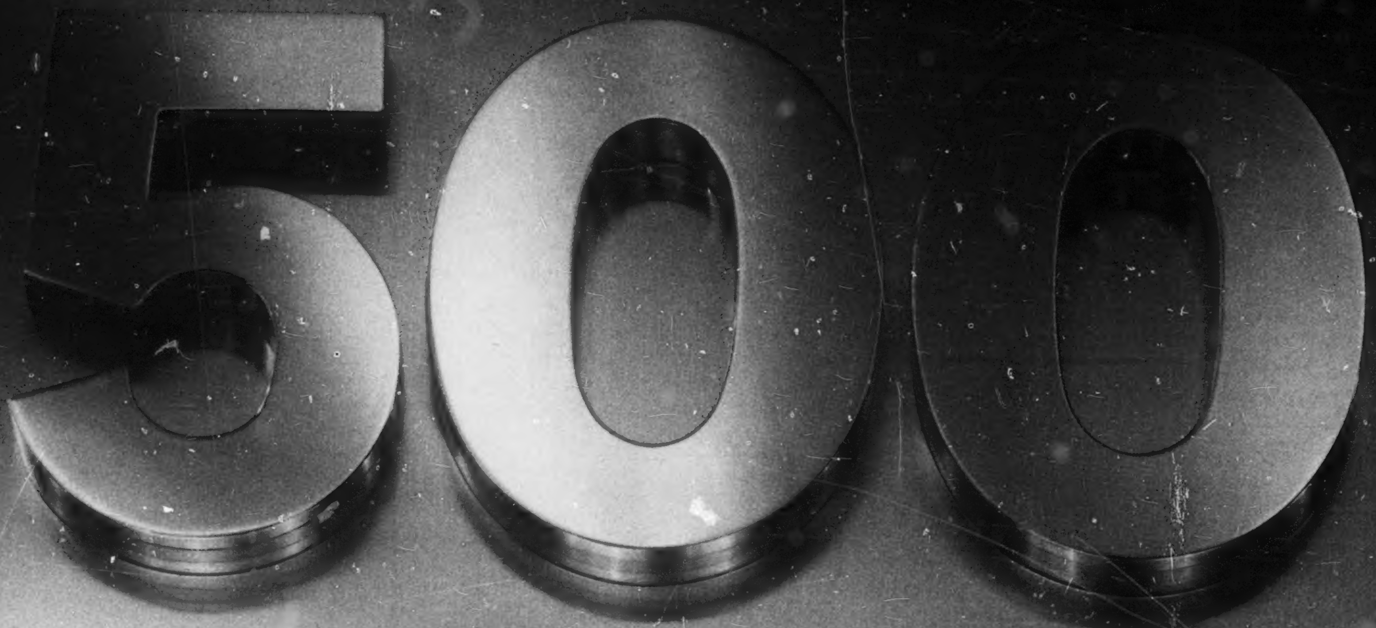
But Toyotas in the air? Not anytime soon. Takaaki Yamada, head of aerospace for Mitsubishi Heavy, thinks it will be 20 to 30 years before Japan can go it alone in the aircraft business.

ROBERT WALLIS—SIPA

Japan's YS-11: no threat

FORTUNE

THE FOR[illegible]



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THE FORTUNE 500

LARGEST U.S. INDUSTRIAL

THE BIGGEST BLOWOUT EVER

By virtually every measure, 1988 was the best year ever for the FORTUNE 500. As the U.S. economy expanded for the sixth straight year, demand continued to surge, factories and refineries operated near capacity, and industrial America's sales, profits, and margins just kept getting better. The 500 grew, of course: Sales rose 7.6%, topping $2 trillion for the first time. Profits rocketed to $115 billion, a 27% jump and another record. Profits in constant dollars exceeded those of the previous inflation-adjusted record year, 1980. Any way you cut it, last year was the most prosperous for the 500 since FORTUNE published the first 500 directory in 1955.

The most impressive number is the 500's median return on equity. At 16.2% it easily beats the previous record of 15.9% set in 1979, and is practically in another world compared with last year's 14.4%. Many investors and managers consider ROE the best one-number gauge of how a company is doing, so by this measure the 500 are singing. That is partly because many have added debt, which increases productive resources without increasing equity, and partly because the corporate tax rate has fallen from 46% to 34%. Another factor: The agony of restructuring has turned many U.S. industrials into leaner, stronger competitors worldwide (see page 42).

The individual ROE champ was Sterling Chemicals of Houston. Its say-that-again return: 235%. This petrochemical company looks ever more imposing against the Texas skyline as it continually adds capacity. Sterling generated $213 million in earnings on $699 million in sales last year—not bad for a three-year-old fledgling making its debut on the list at No. 403.

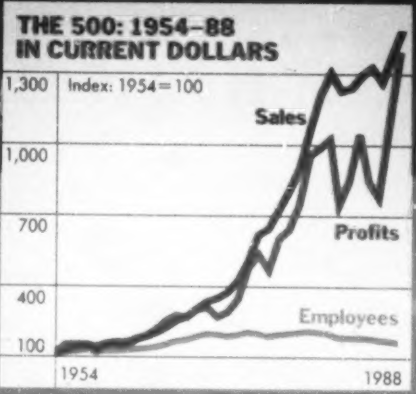
Nearly all of FORTUNE's 27 industry groups posted double-digit earnings growth. Metals shone with a 110% jump, boosted by soaring copper prices and the steel industry's successful restructuring.

PHOTOGRAPH BY STEVE KRONGARD

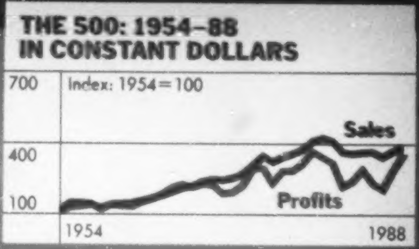
America's major steelmakers blacked out dreary memories of their $12 billion of losses in the early Eighties and built upon a modest recovery that began in 1987. Their stunning metamorphosis from notoriously high-cost manufacturers to some of the world's more efficient producers kept plants running almost flat out. Demand came not so much from a traditionally loyal customer, Detroit, but from the capital goods industry. Heavy machinery manufacturers continue to ride the crest of the export boom, buoyed by the weaker dollar.

The large oil refiners posted a 63% increase in median profits, benefiting from a double dose of luck: OPEC squabbling drove crude oil prices down, lowering costs, while demand strengthened, increasing prices. This happy coincidence widened margins and made the refiners the 500's leaders in total earnings. Phillips Pe-

HOW THE 500 PERFORMED



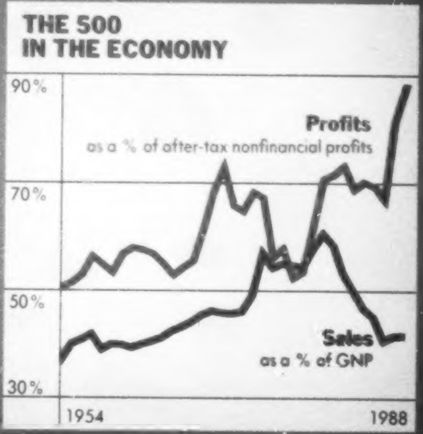
THE 500: 1954–88 IN CURRENT DOLLARS



THE 500: 1954–88 IN CONSTANT DOLLARS

THE 500: 1988 vs. 1987

	1988	1987
SALES (billions)	$2,023.1	$1,879.5
CHANGE IN SALES	7.6%	9.1%
PROFITS (billions)	$115.0	$90.6
CHANGE IN PROFITS	26.9%	41.3%
ASSETS (billions)	$2,078.8	$1,705.7
NO. OF SALES INCREASES	419	415
NO. OF PROFIT INCREASES	327	313
NO. OF MONEY LOSERS	42	48
MEDIAN RETURN ON SALES	5.5%	5.1%
MEDIAN RETURN ON ASSETS	6.8%	6.6%
MEDIAN RETURN ON EQUITY	16.2%	14.4%
MEDIAN RETURN TO INVESTORS	14.1%	6.6%
NO. OF EMPLOYEES (millions)	12.7	13.1



THE 500 IN THE ECONOMY

Phelps Dodge (No. 182) ignites 81,000 pounds of explosives at an Arizona copper mine. Profits more than doubled last year.

troleum exploited the situation to multiply profits from $35 million to $650 million—a staggering 18-fold vault. Pennzoil had the greatest dollar increase in profits, but it owed that bounty to an extraordinary gain from its celebrated settlement with Texaco. Before that credit, Pennzoil had an operating *loss* of $187 million.

Pharmaceuticals posted the best returns in the 500 for the third year running. Median ROE was 23.5% as drug companies benefited from the graying of the U.S. and from the payoff on their commitment to research. Merck, the industry's most profitable company, introduced drugs that combat high blood pressure and cholesterol.

Beverages continued to fizz with a median ROE just a fraction below that of pharmaceuticals. Profits from Coca-Cola's international business, which accounts for nearly three-quarters of the company's earnings, boosted the whole industry. Sales abroad also helped the tobacco industry, which is experiencing softer domestic demand. Exports surged when a

BIGGEST GAINERS

THE TEN LARGEST INCREASES IN SALES

	SALES RANK	
HANNA (M.A.)	330	**121.8%**
LORAL	256	**108.8**
SUN MICROSYSTEMS	327	**95.6**
IMO INDUSTRIES	407	**86.5**
DIBRELL BROTHERS	470	**80.1**
BANTA (GEO.)	482	**74.2**
HANSON INDUSTRIES NA	67	**72.3**
STERLING CHEMICALS	403	**69.2**
COMPAQ COMPUTER	202	**68.7**
CYPRUS MINERALS	275	**66.9**

THE TEN LARGEST INCREASES IN PROFITS*

PENNZOIL	201	**3,233.9%**
PHILLIPS PETROLEUM	31	**1,757.1**
AMAX	117	**1,347.1**
TEXAS INDUSTRIES	428	**941.7**
MACK TRUCKS	199	**677.2**
VALHI	188	**670.8**
NAVISTAR INTERNATIONAL	113	**630.5**
PACIFIC RESOURCES	361	**552.4**
CYPRUS MINERALS	275	**550.1**
TIMKEN	245	**538.7**

*Excludes companies that lost money in 1987.

BIGGEST LOSERS

THE TEN LARGEST DECREASES IN SALES

	SALES RANK	
MAXUS ENERGY	460	**52.8%**
MINSTAR	486	**40.9**
FAIRCHILD INDUSTRIES	455	**34.0**
GENCORP	204	**33.9**
GOLD KIST	328	**30.4**
ALLEGHENY INTERNATIONAL	341	**30.4**
BURLINGTON HOLDINGS	174	**25.2**
AMSTAR	325	**24.5**
FRUEHAUF	196	**23.0**
CHAMPION SPARK PLUG	374	**21.2**

THE FIVE LARGEST DECREASES IN PROFITS*

MANVILLE	190	**1,910.3%**
EAGLE-PICHER INDUSTRIES	379	**1,264.8**
ROBERTSON (H.H.)	494	**1,218.8**
LTV	56	**727.5**
CUMMINS ENGINE	135	**556.9**

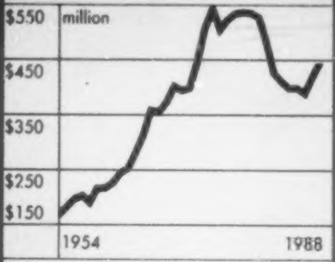
*Decreases over 100% reflect swings from 1987 profits to 1988 losses.

THE FIVE LARGEST LOSSES

		$ MIL.
LTV	56	**$3,153.6**
MANVILLE	190	**1,314.3**
EAGLE-PICHER INDUSTRIES	379	**465.8**
HONEYWELL	60	**434.9**
AVON PRODUCTS	132	**404.5**

WHY HAS NO. 500 BEEN SHRINKING?

SALES OF THE 500th COMPANY IN CONSTANT DOLLARS



Being ranked No. 500 just doesn't mean what it used to. Cincinnati's Chemed Corp., best known as the *other* company that Peter Grace chairs, sits at the bottom of this year's FORTUNE 500 with sales of $500.6 million. But when those sales are measured in constant, inflation-adjusted 1982 dollars, Chemed's revenues are some $100 million less than the 1974 sales of Tyler Corp., a chemical and pipe manufacturer and the record holder as the largest 500th company ever.

Why is No. 500 smaller in real terms than it once was? Is U.S. manufacturing becoming more concentrated in fewer firms? Surprisingly, the answer appears to be no.

In the past five years, mergers and acquisitions were indeed the commonest reasons for companies leaving the list (see page 77). But other factors were also at work. As corporations restructure, they spin off operations. That can turn a FORTUNE 500 company into several smaller ones. A few companies depart each year because they transform themselves into service companies (and show up on the Service 500). Others go private through leveraged buyouts and don't report financial results. Several companies fall off the list each year because reverses leave them too small. Vacancies created by all these factors pull up companies from below.

Industrial concentration doesn't appear to have grown. The Justice Department tracks concentration of assets and employees among America's largest nonfinancial companies. The most recent data show that aggregate concentration has declined since the 1970s. – **Edward C. Baig**

tougher U.S. stance on trade pried open important markets in South Korea and Japan.

Median profits declined for only two of the 27 industry groups: apparel, down 3%, and building materials, down 18% as housing starts declined for the second straight year.

As always, the titans at the top of the list jostled one another a bit. General Motors remained the largest, with $121 billion in sales. But Ford passed Exxon to become No. 2, and General Electric moved into the No. 5 spot, pushing Mobil down to No. 6. The reason for these and several other changes on the list: a new rule from the Financial Accounting Standards Board requiring companies to consolidate results of all their majority-owned subsidiaries. Ford, GE, and many other industrials own finance subsidiaries, results of which were previously reported separately. Included with the rest of a company's numbers, they give a substantial kick to revenues (see box, facing page).

Many of the newcomers to the list should look familiar. Some are spinoffs from FORTUNE 500 companies, while others are progeny of International 500 and Service 500 companies. Sterling Chemicals was created from Monsanto's petrochemical manufacturing facilities. Diamond Shamrock R&M—the initials stand for refining and marketing—took its name from Maxus Energy, which used to be Diamond Shamrock. Borden Chemicals & Plastics comes from Borden, which is keeping its cow. Lorillard is a longtime subsidiary of the Service 500's Loews.

Other notable companies have left the 500. While FASB's consolidation rule made some behemoths loom even larger, it also changed the composition of many. ITT, for example, will move to FORTUNE's Service 500 list because the inclusion of its insurance and finance subsidiaries made it predominantly a service company. Other companies were similarly reclassified because they acquired service companies. General Cinema, for example, bought the Neiman Marcus Group. American Telephone &

THE BEST INVESTMENTS

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1988*

	SALES RANK	
MANVILLE	190	216.7%
MAXXAM	485	204.7
CHICAGO PACIFIC	250	162.0
PENNWALT	291	139.4
VALMONT INDUSTRIES	415	129.6
YORK HOLDINGS	290	121.4
HOLLY FARMS	243	113.5
RJR NABISCO	20	109.8
OHIO MATTRESS	417	107.4
UNIVERSAL FOODS	396	106.4

THE FIVE LOWEST

INTERCO	133	−65.6%
USG	152	−62.9
ANCHOR GLASS CONTAINER	340	−48.3
SEAGATE TECHNOLOGY	285	−42.0
ROBERTSON (H.H.)	494	−41.8
THE 500 MEDIAN		14.1

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1978–88 ANNUAL AVERAGE*

	SALES RANK	
HASBRO	273	54.3%
AFFILIATED PUBLICATIONS	477	47.0
MARION LABORATORIES	389	40.7
BERKSHIRE HATHAWAY	205	40.4
MACMILLAN	331	38.8
COOPER TIRE & RUBBER	391	38.3
TYSON FOODS	212	37.7
PHILIPS INDUSTRIES	405	37.6
TYCO LABORATORIES	239	36.5
OHIO MATTRESS	417	36.5

THE FIVE LOWEST

STORAGE TECHNOLOGY	362	−19.5%
ALLEGHENY INTERNATIONAL	341	−16.7
NAVISTAR INTERNATIONAL	113	−16.1
AM INTERNATIONAL	280	−13.3
LTV	56	−9.4
THE 500 MEDIAN		17.5

THE MOST PROFITABLE, 1988

THE TEN HIGHEST RETURNS ON STOCKHOLDERS' EQUITY

	SALES RANK	
STERLING CHEMICALS	403	**235.3%**
PENNZOIL	201	**114.3**
BEATRICE	57	**108.2**
CYCLOPS INDUSTRIES	289	**82.6**
LORILLARD	263	**82.0**
VISTA CHEMICAL	375	**81.0**
PENNWALT	291	**79.1**
BORG-WARNER	142	**77.5**
GEORGIA GULF	324	**75.6**
MAGNETEK	352	**59.8**
THE 500 MEDIAN		**16.2**

THE TEN HIGHEST RETURNS ON ASSETS

	SALES RANK	
STERLING CHEMICALS	403	**72.4%**
GEORGIA GULF	324	**42.3**
LORILLARD	263	**39.6**
PENNZOIL	201	**32.9**
ARISTECH CHEMICAL	321	**27.8**
UST	440	**27.1**
MARION LABORATORIES	389	**27.1**
REXENE	397	**25.3**
JOSTENS	450	**21.8**
VISTA CHEMICAL	375	**21.7**
THE 500 MEDIAN		**6.8**

THE TEN HIGHEST RETURNS ON SALES

	SALES RANK	
PENNZOIL	201	**70.6%**
STERLING CHEMICALS	403	**30.5**
UST	440	**26.7**
LORILLARD	263	**26.1**
WHEELING-PITTSBURGH STEEL	314	**23.4**
BORDEN CHEMICALS & PLASTICS	472	**21.9**
HIMONT	230	**21.8**
CRAY RESEARCH	385	**20.7**
MERCK	74	**20.3**
BERKSHIRE HATHAWAY	205	**20.0**
THE 500 MEDIAN		**5.5**

Telegraph will appear on the Service 500 simply because revenues from services (such as long-distance calling) outstripped sales of manufactured goods (such as private branch exchanges and telephones). Some private companies disappeared from the list because they decided to stop making their financial results public. BP America, a subsidiary of British Petroleum, was one of these.

A few FORTUNE 500 companies were devoured by other members of the clan. Philip Morris acquired Kraft, which ranked No. 31 last year. While this year's sales include only three weeks of Kraft's results—the official acquisition date was December 7, 1988—look for Philip Morris to be even plumper next year. Eastman Kodak, however, consolidated almost a year's results of Sterling Drug, which last year ranked No. 174. Kodak's sales increased 28%, to $17 billion.

As usual, companies in the list's bottom half set the pace for sales growth. M.A. Hanna, No. 500 a year ago, was this year's champ, leaping to No. 330 with a 122% increase. Hanna, a chemical manufacturer, built a new plant and enlarged six others. Sun Microsystems, only seven years old, continued to expand handsomely and nearly doubled sales last year by offering powerful computer workstations at ever lower prices. Loral, a defense electronics manufacturer, is no newcomer, yet its sales grew at an even sprightlier pace—up 109%.

Observes Loral's annual report: "Profit is not a dirty word." Of course the companies on the FORTUNE 500 have never believed otherwise. And never before have they expressed their agreement so emphatically.

– Reed Abelson and Rahul Jacob

THE MOST PRODUCTIVE, 1988

THE TEN HIGHEST IN SALES PER EMPLOYEE

	SALES RANK	
AG PROCESSING	351	**$1,550,664**
TOSCO	309	**1,344,075**
LOUISIANA LAND & EXPL.	395	**1,162,258**
NATIONAL COOP. REFINERY	448	**1,056,036**
PACIFIC RESOURCES	361	**920,199**
TEXACO	8	**838,600**
BORDEN CHEM. & PLASTICS	472	**789,964**
EXXON	3	**787,693**
GEORGIA GULF	324	**775,868**
ARCHER DANIELS MIDLAND	65	**754,874**

THE FIVE LOWEST

SEAGATE TECHNOLOGY	285	**$42,199**
SSMC	414	**42,038**
RUSSELL	480	**41,987**
MAXXAM	485	**40,883**
DIBRELL BROTHERS	470	**22,561**
THE 500 MEDIAN		**137,888**

THE TEN HIGHEST IN SALES PER DOLLAR OF STOCKHOLDERS' EQUITY

	SALES RANK	
IBC HOLDINGS	365	**$76.92**
AVERY	479	**68.37**
OWENS–ILLINOIS	129	**62.23**
INTERNATIONAL CONTROLS	401	**53.53**
CYCLOPS INDUSTRIES	289	**36.12**
MAGNETEK	352	**32.78**
AMERICAN STANDARD	123	**26.49**
BURLINGTON HOLDINGS	174	**25.54**
SMITHFIELD FOODS	348	**23.37**
MAXUS ENERGY	460	**22.63**

THE FIVE LOWEST

MITCHELL ENERGY	466	**$1.00**
PENN CENTRAL	248	**.87**
BURLINGTON RESOURCES	194	**.72**
BERKSHIRE HATHAWAY	205	**.58**
SEAGRAM (JOSEPH E.) & SONS	191	**.52**
THE 500 MEDIAN		**2.93**

AND NOW, TOGETHER FOR THE FIRST TIME . . .

The Financial Accounting Standards Board has issued a new rule: Henceforth, companies must consolidate results of all majority-owned subsidiaries with the results of their other operations. Reported assets of the auto companies, with their huge credit arms, have ballooned as a consequence—Ford's by nearly $100 billion. Revenue increases at the carmakers, GE, and Xerox, all with large finance subsidiaries, stem partly from the same rule. Another effect: ITT and Harcourt Brace Jovanovich will migrate to the Service 500. After consolidation, they have too much service revenue to be considered industrials.

THE FORTUNE

LARGEST U.S. INDUSTRIAL

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
1	1	**GENERAL MOTORS** Detroit	121,085.4	19.0	4,856.3	4	36.8	164,063.1	1	35,671.7	2
2	3	**FORD MOTOR** Dearborn, Mich.	92,445.6	29.0	5,300.2	2	14.6	143,366.5	2	21,529.0	4
3	2	**EXXON** New York	79,557.0*	4.1	5,260.0	3	8.7	74,293.0	4	31,767.0	3
4	4	**INT'L BUSINESS MACHINES** Armonk, N.Y.	59,681.0	10.1	5,806.0	1	10.4	73,037.0	5	39,509.0	1
5	6	**GENERAL ELECTRIC** Fairfield, Conn.[1]	49,414.0	25.7	3,386.0	5	16.2	110,865.0	3	18,466.0	5
6	5	**MOBIL** New York	48,198.0*	(5.9)	2,087.0	9	65.9	38,820.0	7	15,686.0	6
7	10	**CHRYSLER** Highland Park, Mich.	35,472.7	35.1	1,050.2	21	(18.6)	48,566.8	6	7,582.3	13
8	7	**TEXACO** White Plains, N.Y.	33,544.0*	(2.4)	1,304.0	17	–	26,337.0	14	8,105.0	11
9	9	**E.I. DU PONT DE NEMOURS** Wilmington, Del.	32,514.0*	6.7	2,190.0	8	22.6	30,719.0	10	15,580.0	7
10	12	**PHILIP MORRIS** New York[2]	25,860.0*	16.1	2,337.0	7	26.9	36,960.0	8	7,679.0	12
11	11	**CHEVRON** San Francisco	25,196.0*	(3.1)	1,768.0	11	75.6	33,968.0	9	14,788.0	9
12	14	**AMOCO** Chicago	21,150.0*	4.8	2,063.0	10	51.7	29,919.0	11	13,342.0	10
13	13	**SHELL OIL** Houston[3]	21,070.0*	1.0	1,239.0	18	0.7	27,169.0	12	15,381.0	8
14	16	**OCCIDENTAL PETROLEUM** Los Angeles	19,417.0	13.6	302.0	102	25.8	20,747.0	17	6,224.0	19
15	17	**PROCTER & GAMBLE** Cincinnati[4]	19,336.0	13.7	1,020.0	23	211.9	14,820.0	24	6,337.0	17
16	15	**UNITED TECHNOLOGIES** Hartford	18,087.8	5.3	659.1	42	11.4	12,748.3	25	4,823.4	26
17	18	**ATLANTIC RICHFIELD** Los Angeles	17,626.0*	8.3	1,583.0	12	29.3	21,514.0	16	6,247.0	18
18	25	**EASTMAN KODAK** Rochester, N.Y.[5]	17,034.0	28.0	1,397.0	14	18.6	22,964.0	15	6,780.0	16
19	20	**BOEING** Seattle	16,962.0	10.5	614.0	46	27.9	12,608.0	26	5,404.0	24
20	19	**RJR NABISCO** Atlanta	16,956.0	6.9	1,393.0	15	15.2	17,751.0	19	5,694.0	20
21	24	**DOW CHEMICAL** Midland, Mich.	16,682.0	24.7	2,398.0	6	93.4	16,239.0	22	7,255.0	15
22	34	**XEROX** Stamford, Conn.	16,441.0	59.3	388.0	74	(32.9)	26,441.0	13	5,667.0	22
23	23	**USX** Pittsburgh	15,792.0*	13.6	756.0	35	245.2	19,474.0	18	5,688.0	21
24	21	**TENNECO** Houston	15,707.0†	4.2	822.0	29	–	17,376.0	20	3,161.0	49
25	26	**MCDONNELL DOUGLAS** St. Louis	15,072.0	14.6	350.0	90	11.8	11,885.0	30	3,186.0	47
26	29	**PEPSICO** Purchase, N.Y.	13,007.0	13.1	762.2	33	28.1	11,135.3	32	3,161.0	48
27	33	**WESTINGHOUSE ELECTRIC** Pittsburgh	12,499.5	17.0	822.8	28	11.4	16,937.3	21	3,794.5	36
28	27	**ROCKWELL INTERNATIONAL** El Segundo, Calif.[6]	11,946.3	(1.5)	811.9	31	27.8	9,208.5	39	3,693.0	37
29	28	**ALLIED-SIGNAL** Morristown, N.J.	11,909.0	2.7	463.0	58	(29.4)	10,005.0	35	3,268.0	45
30	38	**DIGITAL EQUIPMENT** Maynard, Mass.[4]	11,475.4	22.2	1,305.6	16	14.8	10,111.6	34	7,510.4	14
31	32	**PHILLIPS PETROLEUM** Bartlesville, Okla.	11,304.0	5.[illegible]	650.0	43	1,757.1	11,968.0	29	2,113.0	71
32	35	**GOODYEAR TIRE & RUBBER** Akron	10,810.4	6.8	350.1	89	(54.6)	8,618.3	41	2,027.1	76
33	30	**LOCKHEED** Calabasas, Calif.	10,667.0	(6.2)	624.0	44	48.2	6,643.0	58	2,476.0	59
34	37	**MINNESOTA MINING & MFG.** St. Paul	10,581.0	12.2	1,154.0	20	25.7	8,922.0	40	5,514.0	23
35	48	**CATERPILLAR** Peoria, Ill.	10,435.0	27.6	616.0	45	76.0	9,686.0	36	4,113.0	32
36	40	**SARA LEE** Chicago[4]	10,423.8	13.9	325.1	95	21.7	5,012.1	82	1,800.1	86
37	58	**WEYERHAEUSER** Tacoma	10,004.2	43.1	564.4	49	26.4	15,387.1	23	4,044.8	33
38	36	**UNISYS** Blue Bell, Pa.	9,902.0	1.9	680.6	40	17.8	11,534.6	31	4,954.9	25
39	49	**HEWLETT-PACKARD** Palo Alto, Calif.[7]	9,831.0	21.5	816.0	30	26.7	7,497.0	48	4,533.0	29
40	51	**ALUMINUM CO. OF AMERICA** Pittsburgh	9,795.3	26.1	861.4	26	330.5	10,537.5	33	4,635.5	27
41	39	**GENERAL DYNAMICS** St. Louis	9,551.0	2.2	379.0	79	(13.3)	6,118.1	61	1,922.0	79
42	52	**INTERNATIONAL PAPER** Purchase, N.Y.	9,533.0	22.8	754.0	36	85.3	9,462.0	38	4,557.0	28
43	44	**GEORGIA-PACIFIC** Atlanta	9,509.0	10.5	467.0	57	2.0	7,115.0	51	2,635.0	56
44	41	**CONAGRA** Omaha[8]	9,475.0	5.3	154.7	167	4.0	3,042.9	134	814.4	183
45	50	**JOHNSON & JOHNSON** New Brunswick, N.J.	9,000.0	12.3	974.0	24	16.9	7,119.0	50	3,503.0	39
46	47	**ANHEUSER-BUSCH** St. Louis	8,924.1*	8.1	715.9	39	16.5	7,109.8	52	3,102.9	51
47	46	**UNOCAL** Los Angeles	8,853.0*	4.6	480.0	55	165.2	9,508.0	37	2,161.0	68
48	43	**SUN** Radnor, Pa.	8,612.0*	(0.9)	7.0	422	(98.0)	8,616.0	42	3,325.0	44
49	54	**COCA-COLA** Atlanta	8,337.8	8.9	1,044.7	22	14.0	7,450.6	49	3,345.3	42
50	59	**UNION CARBIDE** Danbury, Conn.	8,324.0	20.4	662.0	41	185.3	8,441.0	45	1,836.0	83

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				RANK	
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	1988
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	%	Rank	%	Rank		
25,773.8	5	4.0	299	3.0	382	13.6	286	7.17	42.5	1.6	291	45.1	61	11.6	287	17	1
24,552.8	7	5.7	210	3.7	357	24.6	65	10.96	21.1	14.0	89	40.4	70	24.3	74	17	2
57,130.1	2	6.6	167	7.1	204	16.6	213	3.95	15.2	9.8	156	21.1	166	22.1	99	18	3
70,056.6	1	9.7	87	7.9	171	14.7	256	9.80	12.4	6.3	222	9.8	249	9.8	311	6	4
40,595.2	3	6.9	157	3.1	379	18.3	172	3.75	17.2	10.8	150	4.8	297	19.0	151	7	5
19,971.7	10	4.3	283	5.4	284	13.3	292	5.07	65.7	6.7	215	22.5	157	17.4	191	18	6
6,269.1	45	3.0	353	2.2	394	13.9	279	4.66	(21.0)	–		21.3	164	23.1	87	17	7
12,771.2	23	3.9	308	5.0	315	16.1	221	5.35	–	5.5	239	43.6	64	16.1	214	18	8
23,491.1	8	6.7	160	7.1	202	14.1	272	9.11	23.3	5.4	243	5.5	288	13.7	254	5	9
26,911.5	4	9.0	102	6.3	238	30.4	40	10.03	29.4	19.5	32	24.4	142	24.1	78	25	10
17,704.2	12	7.0	153	5.2	296	12.0	317	5.17	75.9	4.8	248	21.9	160	13.3	260	18	11
20,811.9	9	9.8	86	6.9	213	15.5	239	4.00	50.7	8.1	188	13.8	217	16.2	211	18	12
N.A.		5.9	198	4.6	330	8.1	366	N.A.	–	–		–		–		18	13
7,134.4	34	1.6	403	1.5	413	4.7§	398	1.21	14.2	–		14.8	208	14.3	243	8	14
14,904.2	18	5.3	227	6.9	215	16.1	218	5.96	218.7	6.8	211	5.6	286	11.6	288	23	15
5,802.7	50	3.6	315	5.2	302	13.7	283	5.05	11.7	6.4	220	26.3	126	12.4	275	1	16
15,412.5	15	9.0	105	7.4	195	25.3	59	8.78	31.4	10.3	156	22.8	152	17.1	198	18	17
14,913.2	17	8.2	123	6.1	254	20.6	123	4.31	19.1	5.7	234	(4.1)	354	10.7	300	22	18
10,192.3	29	3.6	317	4.9	318	11.4	326	4.02	29.7	6.0	231	68.4	31	15.2	229	1	19
19,459.6	11	8.2	122	7.8	176	24.2§	69	5.92	26.0	12.6	109	109.8	8	30.1	26	8	20
17,206.2	14	14.4	36	14.8	40	23.1	30	12.76	97.2	15.0	74	0.4	330	19.2	146	5	21
6,379.8	41	2.4	374	1.5	412	6.8	373	3.50	(34.6)	(5.1)	329	8.8	260	7.0	335	22	22
8,126.9	31	4.8	257	3.9	352	13.1§	296	2.62	385.2	(0.8)	307	2.5	321	9.1	318	18	23
6,040.6	47	5.2	229	4.7	324	25.2§	61	5.48	–	1.9	284	31.2	109	12.6	269	11	24
3,437.1	88	2.3	375	2.9	383'	11.0	333	9.13	17.8	8.2	185	31.5	107	11.7	285	1	25
10,775.3	28	5.9	201	6.8	216	24.1	71	2.90	28.3	13.6	97	20.8	167	20.7	127	3	26
7,720.2	32	6.6	168	4.9	319	21.7	106	5.66	10.5	15.0	76	9.8	248	25.7	64	7	27
5,590.8	51	6.8	158	8.8	143	22.0	102	3.04	33.9	17.1	51	18.6	182	21.8	103	1	28
5,012.2	62	3.9	307	4.6	328	14.2	268	3.10	(20.5)	0.9	293	21.4	163	12.0	280	1	29
14,002.4	20	11.4	61	12.9	56	17.4	188	9.90	16.1	19.3	33	(27.1)	418	13.9	253	6	30
5,503.6	53	5.8	209	5.4	282	30.2§	42	2.72	4,433.3	5.9	232	44.7	62	13.2	261	18	31
2,765.3	110	3.2	339	4.1	347	17.3	192	6.11	(52.0)	7.0	209	(12.3)	386	18.8	158	21	32
2,855.6	106	5.8	202	9.4	123	25.2	62	10.37	61.8	22.1	21	24.5	140	21.6	107	1	33
15,086.4	16	10.9	66	12.9	55	20.9	117	5.09	26.6	7.7	194	(0.4)	333	11.6	286	22	34
5,907.4	49	5.9	196	6.4	233	15.0	250	6.07	72.9	(0.8)	305	3.9	307	3.8	350	11	35
5,248.5	59	3.1	343	6.5	230	18.1	179	2.83	20.4	13.4	100	22.9	151	27.8	40	8	36
5,295.0	58	5.6	215	3.7	360	14.0	275	2.68	26.4	3.5	271	1.8	325	8.6	323	9	37
4,399.9	73	6.9	156	5.9	266	13.7	281	3.58	13.7	5.6	236	(13.8)	389	6.1	343	6	38
12,567.0	24	8.3	121	10.9	83	18.0	180	3.36	34.4	17.7	48	(8.1)	370	17.5	188	6	39
5,426.6	54	8.8	108	8.2	163	18.6	166	9.74	332.9	8.1	186	23.0	150	13.4	259	15	40
2,199.5	134	4.0	302	6.2	245	19.7	138	9.03	(12.0)	–		6.1	280	14.6	239	1	41
5,136.5	60	7.9	130	8.0	170	16.1§	222	6.57	78.5	10.3	157	12.9	228	14.9	234	9	42
4,018.3	82	4.9	246	6.6	226	17.7	184	4.76	12.5	5.0	246	10.5	245	8.2	324	9	43
2,575.9	115	1.6	401	5.1	308	18.9§	159	1.94	4.9	16.0	59	17.1	189	32.9	19	8	44
14,577.5	19	10.8	67	13.7	49	27.8	49	5.72	18.4	13.1	101	16.3	194	16.2	212	19	45
11,047.1	27	8.0	126	10.1	100	23.1	85	2.45	20.1	19.6	31	(3.6)	352	26.3	59	3	46
4,961.7	64	5.4	220	5.0	312	22.2	99	4.12	164.1	6.5	218	37.9	76	14.1	249	18	47
3,844.7	84	0.1	433	0.1	433	0.2	419	0.06	(98.1)	(33.2)	348	(3.2)	348	14.2	246	18	48
17,296.0	13	12.5	47	14.0	47	31.2	37	2.85	17.3	10.9	145	22.6	155	17.5	187	3	49
4,296.2	76	8.0	127	7.8	177	36.1	24	4.8[illegible]	177.3	9.2	175	24.1	144	19.6	141	5	50

THE FORTUNE

LARGEST U.S. INDUSTRIAL

51-100

RANK 1988	1987	COMPANY	SALES $ Millions	% change from 1987	PROFITS $ Millions	Rank	% change from 1987	ASSETS $ Millions	Rank	STOCKHOLDERS' EQUITY $ Millions	Rank
51	55	**MONSANTO** St. Louis	8,293.0	8.6	591.0	47	35.6	8,461.0	44	3,800.0	35
52	62	**MOTOROLA** Schaumburg, Ill.	8,250.0	23.0	445.0	61	44.5	6,710.0	56	3,375.0	41
53	53	**RAYTHEON** Lexington, Mass.	8,192.1	7.0	489.6	52	10.0	4,739.5	88	2,121.0	70
54	57	**COASTAL** Houston	8,186.5	10.4	157.4	163	39.2	7,865.3	46	1,271.9	127
55	60	**ASHLAND OIL** Russell, Ky.[6]	7,753.1	12.8	222.9	130	67.8	4,254.5	102	1,121.0	144
56	56	**LTV** Dallas	7,525.7	(0.7)	(3,153.6)	477	(727.5)	6,163.0	59	(5,183.4)	487
57	42	**BEATRICE** Chicago[9]	7,505.0¶	(15.9)	529.0	50	–	5,711.0	63	489.0	253
58	65	**AMERICAN BRANDS** Old Greenwich, Conn.	7,476.9*	18.2	580.0	48	11.0	12,200.6	28	2,523.2	58
59	64	**BORDEN** New York	7,243.5	11.2	311.9	99	16.8	4.440.3	97	1,848.6	82
60	63	**HONEYWELL** Minneapolis	7,148.3	7.0	(434.9)	474	(271.4)	5,089.1	77	1,731.3	92
61	72	**TEXTRON** Providence	7,111.2	25.6	234.4‡	122	(8.5)	12,554.1	27	2,384.9	62
62	61	**TRW** Cleveland	6,982.0	2.4	261.0	115	7.2	4,442.0	96	1,566.0	103
63	•	**UNILEVER U.S.** New York[10]	6,955.7	29.9	133.2	183	86.5	6,712.2	55	2,013.9	77
64	66	**BAXTER INTERNATIONAL** Deerfield, Ill.[11]	6,861.0	10.3	388.0	75	17.2	8,550.0	43	3,976.0	34
65	71	**ARCHER DANIELS MIDLAND** Decatur, Ill.[4]	6,798.4	17.7	353.1	87	33.1	4,397.6	99	2,630.5	57
66	67	**EMERSON ELECTRIC** St. Louis[6]	6,651.5	7.8	528.8	51	13.2	5,027.0	80	2,820.1	55
67	115	**HANSON INDUSTRIES NA** Iselin, N.J.[6,12]	6,494.3	72.3	300.3	103	31.1	5,771.6	62	N.A.	
68	75	**TEXAS INSTRUMENTS** Dallas	6,294.8	12.5	366.3	83	18.7	4,427.5	98	2,243.6	63
69	81	**W.R. GRACE** New York	6,199.2	22.8	233.6	123	35.0	5,310.3	68	1,551.1	107
70	68	**PILLSBURY** Minneapolis[8,13]	6,190.6	1.0	69.3	267	(61.9)	3,840.0	106	1,338.0	120
71	70	**RALSTON PURINA** St. Louis[6]	6,175.8	5.2	387.8	76	(25.9)	4,044.4	104	1,089.9	147
72	74	**NCR** Dayton	5,989.9	6.2	439.3	62	4.8	4,717.3	89	2,240.2	65
73	76	**BRISTOL-MYERS** New York	5,972.5	10.6	829.0	27	16.8	5,189.7	72	3,547.0	38
74	80	**MERCK** Rahway, N.J.	5,939.5	17.4	1,206.8	19	33.1	6,127.5	60	2,855.8	54
75	49	**NORTHROP** Los Angeles	5,797.1	(4.2)	104.2	210	10.6	3,139.2	130	1,003.6	159
76	77	**GENERAL MILLS** Minneapolis[8]	5,777.7¶	10.9	283.1	110	27.5	2,671.9	154	648.5	214
77	79	**MARTIN MARIETTA** Bethesda, Md.	5,727.5	10.9	358.9**	85	55.6	3,319.0	126	1,200.6	133
78	91	**HOECHST CELANESE** Bridgewater, N.J.[14]	5,679.0	23.6	250.0	119	47.9	5,703.0	64	3,161.0	50
79	78	**PPG INDUSTRIES** Pittsburgh	5,616.7	8.4	467.6	56	24.0	5,154.1	75	2,243.4	64
80	101	**REYNOLDS METALS** Richmond	5,567.1	30.0	482.0	53	119.6	5,031.7	79	2,040.1	75
81	82	**AMERICAN HOME PRODUCTS** New York	5,500.5	9.4	932.2	25	10.3	4,610.7	91	2,975.7	53
82	89	**BETHLEHEM STEEL** Bethlehem, Pa.	5,488.8	18.8	403.0	68	131.2	4,448.5	95	1,790.8	88
83	73	**COLGATE-PALMOLIVE** New York	5,484.3¶	(2.9)	317.8	97	488.3	3,217.6	128	1,150.6	140
84	86	**NORTH AMERICAN PHILIPS** New York[15]	5,423.5	11.9	79.1	251	–	3,430.7	120	1,582.7	101
85	85	**KIMBERLY-CLARK** Dallas	5,393.5	10.4	378.6	80	16.4	4,267.6	101	1,865.6	81
86	83	**PFIZER** New York	5,385.4	9.5	791.3	32	14.6	7,637.6	47	4,301.1	30
87	108	**DEERE** Moline, Ill.[7]	5,364.8	29.8	315.4	98	–	5,245.3	71	2,456.2	61
88	93	**QUAKER OATS** Chicago[4]	5,329.8	17.4	255.7	117	4.8	2,974.6	138	1,251.1	130
89	88	**H.J. HEINZ** Pittsburgh[16]	5,244.2	13.0	386.0	77	14.0	3,605.1	115	1,593.9	98
90	107	**DANA** Toledo	5,171.7	24.9	162.2	157	12.3	4,786.4	87	959.6	167
91	90	**CHAMPION INTERNATIONAL** Stamford, Conn.	5,128.5	11.1	456.4	59	19.5	6,699.9	57	3,345.0	43
92	95	**JAMES RIVER** Richmond[16]	5,098.0	13.8	209.0	138	23.0	5,005.7	83	2,177.5	67
93	99	**BASF** Parsippany, N.J.[17]	5,000.0	15.4	149.2	172	14.2	2,956.0	139	1,148.0	141
94	97	**ABBOTT LABORATORIES** Abbott Park, Ill.	4,937.0	12.5	752.0	37	18.9	4,825.1	85	2,464.6	60
95	94	**CAMPBELL SOUP** Camden, N.J.[18]	4,868.9	8.4	274.1	111	10.8	3,609.6	114	1,895.0	80
96	96	**LITTON INDUSTRIES** Beverly Hills[18]	4,863.9	10.1	167.0	154	20.9	5,074.5	78	1,175.4	136
97	100	**SMITHKLINE BECKMAN** Philadelphia	4,749.0	9.7	229.2	127	(59.8)	5,016.8	81	1,546.7	108
98	109	**SCOTT PAPER** Philadelphia	4,726.4	14.7	400.9	69	71.5	5,156.3	74	1,951.9	78
99	103	**BAYER USA** Pittsburgh[19]	4,718.5	12.4	124.4	192	1.0	3,626.9	112	1,420.1	115
100	84	**CPC INTERNATIONAL** Englewood Cliffs, N.J.	4,700.0	(4.1)	289.1	108	(18.5)	3,342.0	124	1,194.5	134

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE $ Millions	Rank	PROFITS AS PERCENT OF SALES %	Rank	ASSETS %	Rank	STOCKHOLDERS' EQUITY %	Rank	EARNINGS PER SHARE 1988/$	% change from 1987	1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1988 %	Rank	1978-88 annual average %	Rank	INDUSTRY TABLE NUMBER	RANK 1988
6,296.9	43	7.1	149	7.0	211	15.6	237	8.27	46.9	7.2	205	2.1	323	19.0	152	5	51
5,524.2	52	5.4	224	6.6	225	13.2	294	3.43	43.5	9.8	167	(14.4)	393	14.4	242	7	52
4,505.1	72	6.0	193	10.3	95	23.1	84	7.35	20.1	11.8	126	3.5	312	14.5	240	7	53
2,076.7	140	1.9	391	2.0	398	11.7§	321	2.70	28.6	7.6	200	33.6	94	20.9	122	18	54
2,265.9	129	2.9	356	5.3	289	20.0	133	4.01	87.8	3.8	264	19.4	176	12.9	264	18	55
235.6	389	(41.9)	475	(51.2)	473	–		(30.94)	(829.7)	–		(10.0)	378	(9.4)	373	15	56
N.A.		7.0	151	9.3	131	108.2	3	3.95	–	–		–		–		8	57
6,234.4	46	7.8	134	4.8	323	22.5§	94	5.84	27.0	11.4	138	54.3	44	26.0	63	25	58
4,275.6	77	4.3	286	7.0	209	16.9	203	4.22	16.6	11.2	140	23.1	149	27.4	43	8	59
2,726.1	111	(6.1)	465	(8.5)	464	(25.1)	440	(10.22)	(277.7)	–		14.5	209	9.1	319	7	60
2,410.6	123	3.3	336	1.9	404	9.8	349	2.67‡	(11.6)	1.8	287	9.3	251	12.3	276	1	61
2,687.7	112	3.7	312	5.9	268	16.7	210	4.29	7.0	4.7	252	(9.4)	374	13.2	262	7	62
N.A.		1.9	392	2.0	399	6.6	377	N.A.	–	–		–		–		23	63
4,741.3	68	5.7	212	4.5	331	9.8	352	1.31	14.9	6.8	210	(20.7)	408	7.3	331	22	64
4,204.6	78	5.2	230	8.0	167	13.4	289	1.95	33.0	15.9	63	3.7	309	18.5	142	8	65
6,760.9	37	8.0	128	10.5	92	18.8	161	2.31	15.5	9.0	178	(9.3)	373	14.0	250	7	66
N.A.		4.6	262	5.2	297	–		N.A.	–	–		–		–		5	67
3,185.5	94	5.8	205	8.3	161	16.3	216	4.05	12.8	7.0	207	(25.2)	417	6.3	341	7	68
2,441.4	119	3.8	311	4.4	336	15.1	249	2.75	35.5	2.7	280	14.2	212	13.6	255	5	69
N.A.		1.1	415	1.8	406	5.2	393	0.81	(61.4)	(2.4)	320	92.8	14	26.5	53	8	70
4,966.8	63	6.3	175	9.6	113	35.6	26	5.63	(22.1)	14.6	80	30.7	110	26.4	56	8	71
4,575.5	71	7.3	140	9.3	128	19.6	144	5.33	18.2	6.0	229	(13.9)	390	16.5	208	6	72
13,128.4	22	13.9	38	16.0	30	23.4	79	2.88	16.6	14.1	87	13.0	226	21.7	106	19	73
25,441.0	6	20.3	9	19.7	15	42.3	19	3.05	37.0	16.2	57	11.9	237	21.1	118	19	74
1,360.0	191	1.8	396	3.3	372	10.4	340	2.22	10.4	0.7	295	13.3	221	12.5	272	1	75
4,685.4	69	4.9	247	10.6	89	43.7	16	3.25	30.0	9.1	176	8.3	264	19.4	143	8	76
2,370.3	125	6.3	177	10.8	84	29.9	43	6.75**	58.8	15.2	70	(1.1)	337	20.8	124	1	77
N.A.		4.4	275	4.4	337	7.9	368	N.A.	–	–		–		–		5	78
5,054.9	61	8.3	118	9.1	136	20.8	120	4.26	33.5	15.1	73	25.9	130	26.6	50	5	79
2,963.8	104	8.7	113	9.6	115	23.6	77	9.01	108.1	11.4	137	15.3	204	17.6	185	15	80
12,555.2	25	16.9	20	20.2	11	31.3	36	6.38	11.3	11.2	142	19.8	173	17.2	196	19	81
1,855.4	155	7.3	139	9.1	137	22.5	92	5.32	92.1	0.3	299	38.8	74	5.3	348	15	82
3,188.0	93	5.8	207	9.9	104	27.6	51	4.64	494.9	8.0	191	24.2	143	17.2	197	23	83
N.A.		1.5	407	2.3	392	5.0	396	N.A.	–	–		–		–		7	84
4,900.4	65	7.0	152	8.9	141	20.3	130	4.71	26.3	11.5	136	19.8	172	24.9	70	9	85
9,055.4	30	14.7	31	10.4	94	18.4	170	4.70	15.2	12.4	115	29.0	118	17.1	199	19	86
3,665.5	85	5.9	199	6.0	261	12.8	303	4.48	–	0.2	300	40.1	71	7.1	333	11	87
4,078.8	80	4.8	255	8.6	154	20.4	127	3.20	3.2	14.4	84	30.5	111	29.6	29	8	88
6,276.5	44	7.4	138	10.7	87	24.2	67	2.91	17.8	15.2	71	19.3	178	26.4	55	8	89
1,581.8	168	3.1	342	3.4	369	16.9	201	3.99	20.9	3.6	270	18.7	181	12.4	274	17	90
3,028.8	98	8.9	107	6.8	219	13.6	284	4.80	19.1	3.8	267	(4.4)	356	7.9	327	9	91
2,370.9	124	4.1	298	4.2	343	9.6§	355	2.36	16.3	16.5	56	22.7	154	22.2	98	9	92
N.A.		3.0	351	5.0	313	13.0	299	N.A.	–	–		–		–		5	93
11,692.0	26	15.2	28	15.6	33	30.5	39	3.33	19.8	18.3	44	2.3	322	21.9	102	19	94
4,180.3	79	5.6	216	7.6	187	14.5	261	2.12	11.3	8.9	181	16.4	192	19.1	148	8	95
1,928.6	149	3.4	326	3.3	374	14.2	267	6.33	22.7	–		(0.3)	332	16.8	204	22	96
6,489.4	40	4.8	253	4.6	329	14.8	255	1.84	(59.1)	3.0	275	2.8	316	11.7	284	19	97
3,059.5	97	8.5	116	7.8	183	20.5	125	5.23	71.2	15.8	65	13.6	219	23.7	82	9	98
N.A.		2.6	362	3.4	368	8.8	359	N.A.	–	–		–		–		5	99
4,025.0	81	6.2	185	8.7	152	24.2	68	3.68	(15.2)	9.0	177	32.1	101	21.1	117	8	100

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RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
101	106	**AMERICAN CYANAMID** Wayne, N.J.	4,592.0	10.2	305.6	101	10.9	4,593.1	93	2,062.0	73
102	104	**TIME INC.** New York	4,506.9	7.5	289.3	106	15.8	4,913.2	84	1,359.0	117
103	102	**MEAD** Dayton	4,463.9	6.1	352.7	88	62.0	3,540.5	117	1,567.5	102
104	105	**WHIRLPOOL** Benton Harbor, Mich.	4,421.4	5.8	94.1	228	(51.0)	3,409.7	122	1,320.9	122
105	134	**TELEDYNE** Los Angeles	4,400.6	36.8	391.8	72	3.9	5,125.3	76	2,138.4	69
106	114	**KELLOGG** Battle Creek, Mich.	4,348.9	14.7	480.4	54	21.3	3,306.7	127	1,483.2	113
107	118	**COOPER INDUSTRIES** Houston	4,258.3	18.8	224.4	129	29.1	4,384.0	100	1,771.7	90
108	110	**EATON** Cleveland	4,236.9¶	4.5	212.3	135	5.5	3,033.8	135	1,158.6	138
109	•	**WARNER COMMUNICATIONS** New York	4,206.1	23.6	423.2	64	29.0	4,598.0	92	1,791.2	87
110	87	**AMERADA HESS** New York	4,206.0	(12.1)	124.2	193	(46.0)	5,372.0	67	2,215.2	66
111	98	**TRIANGLE INDUSTRIES** New York[20]	4,103.8	(5.4)	(54.3)	459	(203.9)	5,466.5	66	286.1	336
112	113	**BOISE CASCADE** Boise, Idaho	4,094.6	7.2	289.1	107	58.0	3,610.2	113	1,677.6	95
113	120	**NAVISTAR INTERNATIONAL** Chicago[7]	4,080.2	15.6	244.0	120	630.5	2,522.2	159	865.8	175
114	152	**APPLE COMPUTER** Cupertino, Calif.[4]	4,071.4	53.0	400.3	70	84.0	2,082.1	182	1,003.4	160
115	111	**ELI LILLY** Indianapolis	4,069.7	0.5	761.0	34	18.2	5,262.7	69	3,225.3	46
116	122	**INLAND STEEL INDUSTRIES** Chicago	4,068.0	17.8	262.1	114	80.8	2,925.0	141	1,559.4	105
117	124	**AMAX** New York	3,944.0	14.8	740.9	38	1,347.1	4,076.0	103	1,707.7	93
118	138	**DRESSER INDUSTRIES** Dallas[7]	3,941.7	26.3	156.8	164	220.7	2,899.4	143	1,504.7	112
119	92	**WHITMAN** Chicago[21]	3,914.6	(14.6)	233.5	124	(7.2)	3,485.8	118	868.0	174
120	121	**WARNER-LAMBERT** Morris Plains, N.J.	3,908.4	12.2	340.3	93	15.0	2,702.8	153	998.6	161
121	126	**COCA-COLA ENTERPRISES** Atlanta	3,874.4	16.4	152.6	168	72.7	4,669.2	90	1,808.4	85
122	133	**STONE CONTAINER** Chicago	3,742.5	15.8	341.8	91	111.9	2,395.0	166	1,063.6	150
123	123	**AMERICAN STANDARD** New York	3,716.2	8.1	(26.3)	453	(120.7)	3,662.4	110	140.3	413
124	132	**AGWAY** DeWitt, N.Y.[4]	3,643.9¶	11.6	N.A.		–	1,496.8	225	233.2	365
125	125	**CONTROL DATA** Minneapolis	3,628.3	7.8	1.7	431	(91.2)	2,533.5	158	1,054.2	152
126	127	**GRUMMAN** Bethpage, N.Y.	3,591.3	8.0	86.5	242	142.5	2,566.0	156	782.3	187
127	157	**GREAT NORTHERN NEKOOSA** Norwalk, Conn.	3,588.1	38.6	341.7	92	70.3	3,821.4	107	1,532.9	110
128	135	**GILLETTE** Boston	3,581.2	13.1	268.5	113	16.8	2,867.9	146	(84.6)	476
129	116	**OWENS-ILLINOIS** Toledo[22]	3,571.9	(3.8)	(59.0)	462	–	5,178.7	73	57.4	458
130	131	**UNITED BRANDS** Cincinnati	3,503.2	7.2	60.4	284	1.7	1,435.5	226	400.8	278
131	128	**COMBUSTION ENGINEERING** Stamford, Conn.	3,483.9	5.5	(245.2)	472	(533.5)	2,545.8	157	593.2	229
132	129	**AVON PRODUCTS** New York	3,364.5	2.2	(404.5)	473	(354.2)	2,460.4	162	239.3	361
133	155	**INTERCO** St. Louis[9]	3,341.4	27.8	145.0	176	47.0	1,985.6	188	1,251.3	129
134	141	**GANNETT** Arlington, Va.	3,314.5	7.6	364.5	84	14.1	3,792.8	108	1,786.4	89
135	148	**CUMMINS ENGINE** Columbus, Ind.	3.310.1	19.6	(63.4)	463	(556.9)	2,064.0	186	701.5	202
136	137	**FMC** Chicago	3,286.9	4.7	129.2	187	(28.4)	2,748.8	152	(223.6)	479
137	140	**BRUNSWICK** Skokie, Ill.	3,282.0	6.3	193.1	145	14.4	2,092.0	181	949.8	168
138	136	**TIMES MIRROR** Los Angeles	3,259.4	3.3	331.9	94	24.5	3,475.6	119	1,686.9	94
139	154	**QUANTUM CHEMICAL** New York	3,235.3¶	22.4	382.7	78	52.1	2,907.7	142	(407.0)	482
140	143	**ARMCO** Parsippany, N.J.	3,227.3	10.3	145.4	174	23.6	2,788.2	150	890.4	171
141	117	**SIPCO** Greeley, Colo.[7,38]	3,225.4	(12.6)	10.6	415	–	361.7	451	(.01)	470
142	119	**BORG-WARNER** Chicago	3,217.7¶	(9.5)	419.3	66	–	2,668.1	155	541.2	240
143	166	**PACCAR** Bellevue, Wash.	3,112.2	28.4	175.8	150	56.3	2,831.5	149	904.2	170
144	151	**JOHNSON CONTROLS** Milwaukee[6]	3,099.6	15.8	103.5	211	15.5	2,013.3	187	852.5	177
145	146	**WANG LABORATORIES** Lowell, Mass.[4]	3,068.4	8.2	92.7	231	–	2,838.0	147	1,586.1	100
146	153	**INGERSOLL-RAND** Woodcliff Lake, N.J.	3,021.4	14.1	161.6	160	37.3	2,483.2	161	1,342.8	119
147	149	**SCHERING-PLOUGH** Madison, N.J.	2,969.4	10.0	389.8	73	23.2	3,425.6	121	1,677.0	96
148	•	**HENLEY GROUP** Hampton, N.H.	2,903.0	(17.4)	(47.0)	458	–	2,833.0	148	1,589.0	99
149	162	**R.R. DONNELLEY & SONS** Chicago	2,878.4	15.9	205.3	140	(5.9)	2,346.3	171	1,296.4	124
150	200	**INTEL** Santa Clara, Calif.	2,874.8	50.7	452.9	60	82.6	3,549.7	116	2,080.1	72

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE $ Millions	MARKET VALUE Rank	PROFITS AS PERCENT OF SALES %	SALES Rank	ASSETS %	ASSETS Rank	STOCKHOLDERS' EQUITY %	STOCKHOLDERS' EQUITY Rank	EARNINGS PER SHARE 1988/$	% change from 1987	1978-88 annual growth rate %	1978-88 annual growth rate Rank	TOTAL RETURN TO INVESTORS 1988 %	1988 Rank	1978-88 annual average %	1978-88 annual average Rank	INDUSTRY TABLE NUMBER	RANK 1988
4,388.6	74	6.7	166	6.7	223	14.8	254	3.41	12.9	7.7	199	16.0	197	18.7	159	5	101
6,549.5	39	6.4	172	5.9	267	21.3	112	5.01	19.8	5.7	235	31.5	106	22.4	96	20	102
2,415.5	121	7.9	131	10.0	103	22.5	93	5.37	55.7	7.7	196	17.3	188	18.1	172	9	103
1,845.0	157	2.1	384	2.8	388	7.1	372	1.36	(49.3)	(0.1)	303	5.9	283	15.4	224	7	104
3,933.3	83	8.9	106	7.6	185	18.3	174	34.03	5.5	13.7	93	10.6	243	22.6	95	7	105
7,380.0	33	11.0	63	14.5	42	32.4	31	3.90	21.9	15.2	72	26.0	128	27.4	44	8	106
2,806.9	107	5.3	228	5.1	307	12.7	305	2.21	27.4	4.1	259	0.4	328	12.2	278	7	107
2,184.3	135	5.0	243	7.0	210	18.3	173	5.69	19.2	5.5	240	9.1	255	18.1	171	17	108
7,119.7	35	10.1	79	9.2	133	23.6	76	2.65	28.0	11.9	123	34.7	87	18.8	156	7	109
2,982.0	101	3.0	354	2.3	391	5.6	391	1.51	(44.7)	(1.2)	310	29.5	117	12.2	277	18	110
N.A.		(1.3)	447	(1.0)	443	(19.0)	438	N.A.	–	–		–		–		14	111
1,886.7	153	7.1	150	8.0	168	17.2	193	6.34	71.4	8.0	192	4.0	306	14.8	237	9	112
1,580.4	169	6.0	192	9.7	110	28.2	48	0.84	2,700.0	(18.0)	347	26.5	125	(16.1)	375	17	113
4,296.9	75	9.8	83	19.2	17	39.9	22	3.08	86.7	–		(3.4)	349	–		6	114
12,575.0	21	18.7	15	14.5	43	23.6	78	5.33	20.9	10.8	146	12.7	231	17.9	180	19	115
1,538.3	172	6.4	170	9.0	138	16.8	206	7.39	78.5	(0.3)	304	39.5	72	5.4	347	15	116
2,070.9	142	18.8	14	18.2	22	43.3§	17	8.42	1,488.7	11.8	125	14.2	213	(1.5)	365	15	117
2,472.4	117	4.0	301	5.4	283	10.4	339	2.27	249.2	(1.4)	311	14.3	211	7.8	328	11	118
3,331.2	91	6.0	194	6.7	221	26.9	[illegible]	2.19	(1.8)	5.3	245	19.4	175	26.6	51	8	119
5,415.2	57	8.7	112	12.6	63	34.1	[illegible]	5.00	20.5	6.7	214	19.6	174	18.0	174	19	120
2,109.5	138	3.9	304	3.3	375	8.4	362	1.03	63.5	–		5.6	285	–		3	121
1,888.7	151	9.1	99	14.3	45	32.1	32	5.69	102.5	–		32.1	100	35.1	13	9	122
N.A.		(0.7)	437	(0.7)	440	(18.8)	437	N.A.	–	–		–		–		4	123
N.A.		–		–		–		N.A.	–	–		–		–		8	124
888.5	256	0.0	434	0.1	434	0.2	420	0.03	(93.3)	(36.0)	349	(9.2)	372	2.4	354	6	125
703.2	282	2.4	371	3.4	370	10.4§	338	2.50	166.0	7.5	202	20.3	170	14.9	233	1	126
2,208.4	133	9.5	91	8.9	139	22.3	97	6.21	68.8	16.0	61	(14.8)	394	19.0	150	9	127
3,429.9	89	7.5	136	9.4	126	–		2.45	22.5	4.6	120	25.4	136	24.1	77	14	128
N.A.		(1.7)	452	(1.1)	446	(102.8)	448	N.A.	–	–		–		–		4	129
574.4	311	1.7	398	4.2	341	15.1	248	1.47	14.2	9.4	173	9.0	256	19.1	149	8	130
1,070.6	220	(7.0)	467	(9.6)	466	(41.3)	443	(6.40)	(515.6)	–		(3.6)	350	10.3	307	14	131
1,232.5	203	(12.0)	469	(16.4)	469	(169.0)	451	(6.79)	(400.4)	–		(19.2)	406	(1.9)	366	23	132
122.1	420	4.3	281	7.3	197	11.6	323	3.50	11.8	2.1	283	(65.6)	429	(0.3)	361	10	133
5,959.2	48	11.0	65	9.6	112	20.4	128	2.26	14.1	12.6	110	(6.3)	365	18.5	162	20	134
668.9	290	(1.9)	453	(3.1)	455	(9.0)	431	(6.71)	(1,320.0)	–		41.8	69	11.3	295	11	135
1,252.6	199	3.9	305	4.7	326	–		3.60	(16.1)	(1.6)	312	(5.2)	359	25.2	66	5	136
1,467.6	179	5.9	197	9.2	132	20.3	129	2.20	15.8	22.6	19	16.8	190	31.3	21	27	137
4,597.6	70	10.2	77	9.5	116	19.7	140	2.58	25.2	9.6	170	(5.8)	362	19.7	139	20	138
1,337.6	193	11.8	53	13.2	54	–		14.57	88.0	15.9	62	49.9	53	27.5	42	5	139
965.8	243	4.5	269	5.2	295	16.3	215	1.57	13.8	(9.6)	337	(11.1)	381	(3.9)	368	15	140
N.A.		0.3	427	2.9	384	–		5,693.00	–	–		–		–		8	141
N.A.		13.0	42	15.7	32	77.5	8	N.A.	–	–		–		–		17	142
1,619.6	167	5.6	214	6.2	243	19.4	147	4.90	56.5	7.4	204	51.0	51	26.5	54	17	143
1,301.6	195	3.3	332	5.1	303	12.1	312	2.83	28.6	5.4	241	47.9	58	15.8	218	21	144
1,529.3	174	3.0	349	3.3	376	5.8	388	0.56	–	12.5	112	(22.8)	413	8.9	321	6	145
1,996.7	145	5.3	225	6.5	229	12.0	313	3.00	38.2	1.2	292	(0.8)	336	11.4	293	11	146
7,001.3	36	13.1	41	11.4	75	23.2	81	3.48	27.5	6.8	213	24.1	145	18.8	157	19	147
1,531.7	173	(1.6)	450	(1.7)	450	(3.0)	426	(2.55)	–	–		8.8	259	–		22	148
2,973.9	103	7.1	147	8.8	147	15.8	229	2.64	(5.7)	13.5	98	8.6	262	20.8	123	20	149
4,761.7	67	15.8	25	12.8	58	21.8	105	2.51	81.9	21.4	22	(10.4)	379	15.8	220	7	150

LARGEST U.S. INDUSTRIAL

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
151	144	**OWENS-CORNING FIBERGLAS** Toledo	2,831.0	(2.1)	180.0	146	(5.6)	1,596.0	216	(619.8)	483
152	142	**USG** Chicago	2,810.8	(7.7)	125.4	190	(28.6)	1,821.2	199	(1,470.9)	485
153	158	**FARMLAND INDUSTRIES** Kansas City, Mo.[24]	2,803.4	8.7	N.A.		–	1,057.2	280	386.3	282
154	150	**HERCULES** Wilmington, Del.	2,802.1	4.1	120.4	195	(85.3)	3,325.3	125	2,044.5	74
155	164	**EMHART** Farmington, Conn.	2,762.5	12.5	126.6	189	18.9	2,428.6	164	970.9	164
156	160	**UPJOHN** Kalamazoo, Mich.	2,746.2	8.9	353.4	86	15.9	3,139.3	129	1,821.0	84
157	156	**KERR-MCGEE** Oklahoma City	2,743.0	5.2	110.0	203	35.8	3,123.0	131	1,422.0	114
158	212	**ETHYL** Richmond	2,718.0	58.0	231.0	125	19.5	5,250.6	70	1,128.9	143
159	170	**ZENITH ELECTRONICS** Glenview, Ill.	2,685.7	13.7	11.7**	410	–	1,427.5	230	503.2	248
160	169	**ARMSTRONG WORLD INDUSTRIES** Lancaster, Pa.	2,680.3	13.3	162.7	156	8.2	2,097.7	180	1,021.8	154
161	171	**AMP** Harrisburg, Pa.	2,669.7	15.2	319.1	96	27.8	2,375.5	167	1,521.3	111
162	175	**PITNEY BOWES** Stamford, Conn.	2,665.2	18.4	243.4	121	22.0	4,788.4	86	1,269.2	128
163	173	**UNION CAMP** Wayne, N.J.	2,660.9	15.3	295.1	105	42.3	3,094.4	132	1,550.3	106
164	161	**AMERICAN PETROFINA** Dallas[25]	2,634.7	6.1	132.9	184	59.6	2,355.8	170	830.3	179
165	•	**NATIONAL STEEL** Pittsburgh[26]	2,590.1	7.6	88.2**	237	84.8	1,790.8	202	658.5	213
166	182	**SQUIBB** Princeton, N.J.	2,585.8	19.9	425.5	63	18.7	3,083.1	133	1,400.6	116
167	165	**HERSHEY FOODS** Hershey, Pa.	2,561.2	5.2	213.9	132	44.4	1,764.7	204	1,005.9	158
168	177	**ROHM & HAAS** Philadelphia	2,535.0	15.1	230.0	126	17.6	2,242.0	173	1,207.0	131
169	180	**B.F. GOODRICH** Akron	2,520.0	16.2	195.7	143	86.4	2,073.0	183	1,154.6	139
170	159	**VF** Wyomissing, Pa.	2,516.1	(2.2)	173.7	151	(3.4)	1,759.9	205	1,095.4	146
171	168	**HILLSBOROUGH HOLDINGS** Tampa[24,27]	2,506.9	5.1	N.A.		–	N.A.		N.A.	
172	167	**REVLON GROUP** New York	2,477.0[28]	3.3	N.A.		–	N.A.		N.A.	
173	204	**NATIONAL SEMICONDUCTOR** Santa Clara, Calif.[8]	2,469.7	32.2	62.7	277	–	1,777.0	203	1,013.6	155
174	130	**BURLINGTON HOLDINGS** New York[6]	2,452.1	(25.2)	(23.8)‡	450	–	2,361.4	168	96.0	434
175	193	**MASCO** Taylor, Mich.	2,438.6	20.5	288.3	109	31.8	2,999.2	137	1,546.1	109
176	183	**AIR PRODUCTS & CHEMICALS** Allentown, Pa.[6]	2,431.9	13.6	213.7	133	37.4	2,999.5	136	1,272.2	126
177	184	**UNIVERSAL** Richmond[4]	2,414.2	14.8	60.7	283	8.5	1,006.6	285	356.9	298
178	178	**PREMARK INTERNATIONAL** Deerfield, Ill.	2,397.0	9.1	105.3	209	47.2	1,655.2	211	754.4	190
179	179	**LAND O'LAKES** Arden Hills, Minn.	2,354.9	7.6	N.A.		–	756.1	337	252.4	355
180	163	**ENGELHARD** Edison, N.J.	2,350.7	(5.2)	63.7	276	(8.7)	1,413.2	235	760.4	189
181	181	**TRIBUNE** Chicago	2,334.8	8.1	210.4	137	48.7	2,941.6	140	1,188.5	135
182	221	**PHELPS DODGE** Phoenix	2,319.8	43.9	420.2	65	104.3	2,755.2	151	1,676.1	97
183	194	**MORTON THIOKOL** Chicago[4]	2,316.4	16.6	145.3	175	5.3	1,920.2	193	1,065.3	149
184	197	**BAKER HUGHES** Houston[6]	2,316.2	20.4	103.2**	216	–	2,117.5	177	961.5	165
185	196	**OLIN** Stamford, Conn.	2,308.0	19.6	98.0	221	25.6	1,940.0	191	683.0	207
186	172	**GEO. A. HORMEL** Austin, Minn.[7]	2,292.8	(0.9)	60.2	286	31.0	706.5	348	418.7	273
187	195	**BLACK & DECKER** Towson, Md.[6]	2,280.9	17.9	97.1	223	74.7	1,825.1	198	724.9	195
188	•	**VALHI** Dallas	2,252.4	62.9	85.9	244	670.8	2,291.2	172	310.6	321
189	203	**PARKER-HANNIFIN** Cleveland[4]	2,251.7	20.0	106.5	207	25.1	1,741.8	207	845.7	178
190	190	**MANVILLE** Denver	2,209.2	7.1	(1,314.3)	476	(1,910.3)	2,200.0	175	798.0	184
191	192	**JOSEPH E. SEAGRAM & SONS** New York[28,29]	2,198.8*	8.4	418.4	67	23.9	6,727.2	54	4,232.6	31
192	188	**KNIGHT-RIDDER** Miami	2,193.8	5.8	156.4	166	0.8	2,357.0	169	821.6	181
193	229	**CENTRAL SOYA** Fort Wayne[24]	2,189.5	43.8	11.4	411	31.3	723.6	345	187.5	388
194	•	**BURLINGTON RESOURCES** Seattle	2,167.3	–	72.1	260	–	5,588.9	65	3,020.0	52
195	189	**WEST POINT-PEPPERELL** West Point, Ga.[6,31]	2,151.1	4.0	84.4	246	17.8	2,453.6	163	783.9	186
196	147	**FRUEHAUF** Detroit	2,142.9	(23.0)	(56.5)	460	–	1,583.7	219	(96.6)	477
197	201	**WESTVACO** New York[7]	2,133.9	12.1	200.4	141	37.1	2,512.8	160	1,318.3	123
198	186	**CORNING GLASS WORKS** Corning, N.Y.	2,121.5	1.8	210.7**	136	1.5	2,897.9	144	1,560.7	104
199	205	**MACK TRUCKS** Allentown, Pa.	2,102.2	13.2	31.8**	350	677.2	1,684.3	210	531.2	243
200	223	**TEMPLE-INLAND** Diboll, Tex.[32]	2,099.0	31.0	199.2	142	40.9	3,370.3	123	1,095.8	145

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				RANK	
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	%	Rank	%	Rank		1988
1,150.0	213	6.7	165	11.8	70	–		4.51	(6.2)	0.5	296	35.9	82	22.8	90	4	151
323.8	364	4.5	271	6.9	214	–		2.38	(39.9)	4.1	261	(62.9)	428	10.3	306	4	152
N.A.		–		–		–		N.A.	–	–		–		–		18	153
2,138.1	136	4.3	288	3.6	361	5.9	387	2.55	(82.7)	0.8	294	(1.2)	343	15.3	219	5	154
2,653.1	113	4.6	265	5.2	294	13.0	297	2.02	18.8	4.1	258	13.2	225	16.7	205	14	155
5,418.8	55	12.9	44	11.3	77	19.4	149	1.90	16.6	10.1	159	(1.8)	342	17.1	200	19	156
1,993.5	146	4.0	300	3.5	363	7.7	369	2.27	35.9	(0.1)	302	7.7	268	8.2	325	18	157
2,790.1	108	8.5	115	4.4	335	20.5§	126	1.91	21.7	13.7	96	19.3	179	28.0	39	5	158
527.5	324	0.4	425	0.8	423	2.3	412	0.45**	–	(9.6)	338	28.8	119	5.7	346	6	159
1,712.1	164	6.1	189	7.8	184	15.9	225	3.51	10.4	11.5	134	11.6	240	21.3	115	24	160
4,794.8	66	12.0	52	13.4	52	21.0	116	2.96	28.1	12.8	103	(2.7)	346	18.3	166	7	161
3,398.4	90	9.1	100	5.1	309	19.2	152	3.08	21.7	14.0	88	14.1	214	26.3	58	6	162
2,416.8	120	11.1	62	9.5	117	18.9	157	4.25	50.2	9.7	168	(1.7)	341	12.9	265	9	163
1,103.5	216	5.0	239	5.6	275	16.0	223	10.07	59.3	12.8	104	23.1	148	15.6	222	18	164
N.A.		3.4	329	4.9	316	13.4	288	N.A.	–	–		–		–		15	165
6,372.3	42	16.5	23	13.8	48	30.4	41	4.30	25.7	12.7	105	11.3	242	20.6	129	19	166
2,333.6	126	8.4	117	12.1	66	21.3	113	2.37	44.5	16.8	54	8.9	258	27.4	45	8	167
2,254.8	131	9.1	101	10.3	98	19.1	154	3.46	21.4	17.1	52	12.2	234	24.9	68	5	168
1,336.1	194	7.8	133	9.4	122	16.9§	204	7.42	82.8	5.4	242	32.0	103	17.5	186	5	169
2,218.3	132	6.9	155	9.9	105	15.9	227	2.55	(3.8)	20.7	25	20.7	168	35.4	12	2	170
N.A.		–		–		–		N.A.	–	–		–		–		4	171
N.A.		–		–		–		N.A.	–	–		–		–		23	172
865.3	264	2.5	366	3.5	362	6.2	382	0.48	–	2.3	282	(18.8)	405	7.5	330	7	173
N.A.		(1.0)	441	(1.0)	444	(24.8)	439	(1.88)‡	–	–		–		–		24	174
3,522.9	86	11.8	54	9.6	111	18.6	163	2.10	27.3	13.8	90	19.4	177	20.1	133	10	175
2,415.0	122	8.8	109	7.1	203	16.8	207	3.90	41.3	11.2	141	3.8	308	15.9	217	5	176
609.5	302	2.5	367	6.0	258	17.0	196	3.56	9.5	12.1	119	11.5	241	20.1	132	25	177
1,092.2	218	4.4	276	6.4	234	14.0	276	3.03	45.7	–		42.9	66	–		21	178
N.A.		–		–		–		N.A.	–	–		–		–		8	179
951.8	246	2.7	360	4.5	332	8.4	363	1.42	(11.3)	–		(10.7)	380	–		5	180
2,857.3	105	9.0	103	7.2	201	17.7	186	2.78	54.4	–		(2.7)	345	–		20	181
2,070.0	143	18.1	17	15.3	37	25.1	63	13.15	102.9	27.5	9	15.2	205	11.6	289	15	182
2,094.8	139	6.3	176	7.6	188	13.6	285	3.04	4.8	12.3	116	(5.2)	360	18.0	175	5	183
1,988.6	147	4.5	272	4.9	317	10.7	335	0.82**	–	(4.8)	328	6.0	282	2.1	357	11	184
1,042.8	224	4.2	292	5.1	311	14.3	265	4.63	37.0	5.9	233	25.7	132	15.9	215	5	185
883.8	260	2.6	364	8.5	158	14.4	264	1.57	30.8	11.7	129	4.7	299	26.1	62	8	186
1,386.4	187	4.3	291	5.3	288	13.4	290	1.65	73.7	0.4	297	24.8	138	6.6	339	11	187
1,526.7	175	3.8	310	3.7	355	27.6	50	0.75	650.0	(10.0)	340	33.8	93	16.9	203	5	188
1,383.3	189	4.7	258	6.1	250	12.6	307	2.20	17.0	5.0	247	(20.6)	407	13.9	252	11	189
885.0	259	(59.5)	476	(59.7)	474	(164.7)	450	(10.83)	(647.0)	–		216.7	1	(8.0)	372	4	190
N.A.		19.0	13	6.2	242	9.9	348	N.A.	–	–		–		–		3	191
2,324.3	127	7.1	148	6.6	224	19.0	156	2.76	4.2	9.0	180	16.2	196	17.7	184	20	192
N.A.		0.5	423	1.6	411	6.1	385	N.A.	–	–		–		–		8	193
6,695.1	38	3.3	333	1.3	417	2.4	411	0.46	–	–		–		–		16	194
1,712.5	163	3.9	306	3.4	367	10.8	334	2.82	18.5	5.3	244	73.6	25	25.4	65	24	195
23.8	433	(2.6)	457	(3.6)	456	–		(6.50)	–	–		(16.7)	398	–		17	196
1,836.2	158	9.4	94	8.0	169	15.2	245	3.10	37.8	10.4	154	7.6	271	18.9	155	9	197
3,021.2	100	9.9	82	7.3	198	13.5	287	2.34**	4.2	4.7	250	52.5	46	13.6	256	4	198
440.0	341	1.5	405	1.9	402	6.0	386	1.07**	664.3	–		4.2	302	–		17	199
1,461.9	180	9.5	92	5.9	265	18.2	177	7.15	52.5	–		0.4	329	–		9	200

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LARGEST U.S. INDUSTRIAL

RANK 1988	RANK 1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
201	206	**PENNZOIL** Houston	2,088.4	16.9	1,475.4**	13	3,233.9	4,479.6	94	1,290.8	125
202	282	**COMPAQ COMPUTER** Houston	2,065.6	68.7	255.2	118	87.3	1,590.0	218	814.6	182
203	187	**HARRIS** Melbourne, Fla.[4]	2,062.6	(0.8)	100.5	218	18.9	1,643.7	214	972.2	163
204	139	**GENCORP** Fairlawn, Ohio[33]	2,049.0	(33.9)	70.0	265	(85.3)	1,230.0	251	(36.0)	474
205	•	**BERKSHIRE HATHAWAY** Omaha	1,991.9	(7.7)	399.3	71	70.2	6,816.8	53	3,410.1	40
206	•	**MCDERMOTT** New Orleans[34,35]	1,991.5	(2.6)	22.2**	380	–	2,869.4	145	691.9	206
207	255	**ASARCO** New York	1,988.1	46.7	207.2	139	(25.8)	2,223.4	174	1,330.7	121
208	225	**DOVER** New York	1,953.8	23.2	145.8	173	30.5	1,365.6	244	741.1	193
209	185	**SHERWIN-WILLIAMS** Cleveland	1,950.5	(6.9)	101.1	217	4.7	1,258.7	250	601.3	228
210	257	**SEQUA** New York	1,947.6¶	44.3	68.6	269	–	1,959.1	189	700.5	203
211	230	**FREEPORT-MCMORAN** New Orleans	1,944.6	28.4	310.1	100	24.7	3,729.8	109	1,089.5	148
212	207	**TYSON FOODS** Springdale, Ark.[6]	1,936.0	8.4	81.4	250	20.2	889.1	305	341.4	308
213	214	**ILLINOIS TOOL WORKS** Chicago	1,929.8	13.6	149.0	180	31.9	1,380.2	240	744.7	192
214	216	**TRINOVA** Maumee, Ohio	1,918.6	14.1	87.8	239	16.9	1,431.5	227	679.2	209
215	209	**STANLEY WORKS** New Britain, Conn.	1,909.0	8.3	103.5	212	19.4	1,405.2	236	697.9	204
216	199	**MAYTAG** Newton, Iowa	1,908.7	0.0	158.6	162	3.8	1,330.1	247	501.5	249
217	198	**LOUISIANA-PACIFIC** Portland, Ore.	1,903.2	(1.0)	299.6**	104	139.7	1,796.4	200	1,137.1	142
218	208	**POLAROID** Cambridge, Mass.	1,862.9	5.6	(22.6)	449	(119.5)	1,957.2	190	1,011.5	156
219	210	**FORT HOWARD** Green Bay, Wis.	1,858.8	5.7	N.A.		–	N.A.		N.A.	–
220	226	**BECTON DICKINSON** Franklin Lakes, N.J.[6]	1,846.7	16.7	162.3	159	9.3	2,067.5	185	959.8	166
221	213	**CROWN CORK & SEAL** Philadelphia	1,834.1	6.8	93.4	230	5.8	1,073.2	276	648.0	215
222	217	**SPRINGS INDUSTRIES** Fort Mill, S.C.	1,824.8	9.9	52.8	299	(5.1)	1,118.3	265	541.6	239
223	211	**MCGRAW-HILL** New York	1,818.0	3.8	185.5	148	12.6	1,758.4	206	922.8	169
224	•	**DIAMOND SHAMROCK R&M** San Antonio	1,803.9	–	53.5	298	–	843.2	312	354.3	299
225	227	**MAPCO** Tulsa	1,802.4	14.0	117.1	197	8.1	1,375.6	241	610.6	226
226	231	**AMDAHL** Sunnyvale, Calif.	1,801.8	19.7	223.3	131	53.0	1,930.9	192	1,010.8	157
227	222	**GENERAL SIGNAL** Stamford, Conn.	1,760.2	9.8	25.2	371	(63.7)	1,396.6	237	461.0	261
228	215	**NEW YORK TIMES** New York	1,755.2	3.9	167.7	153	4.6	1,914.7	194	875.6	172
229	239	**WILLAMETTE INDUSTRIES** Portland, Ore.	1,716.0	19.9	161.1	161	32.8	1,430.2	228	746.5	191
230	292	**HIMONT** Wilmington, Del.[7,36]	1,710.8	46.8	372.9	81	64.3	1,905.0	195	1,358.1	118
231	228	**INTERNATIONAL MULTIFOODS** Minneapolis[5]	1,697.8	10.7	33.1	347	(35.9)	787.7	325	349.6	305
232	241	**CABOT** Waltham, Mass.[6]	1,676.6	17.7	60.4	285	110.4	1,543.2	223	607.3	227
233	234	**SQUARE D** Palatine, Ill.	1,656.8	11.6	118.9	196	8.1	1,335.7	245	636.0	218
234	218	**COLT INDUSTRIES** New York	1,656.1	0.9	91.0	234	21.3	982.2	288	(844.6)	484
235	233	**MID-AMERICA DAIRYMEN** Springfield, Mo.	1,654.8	10.3	N.A.		–	394.3	443	144.1	410
236	236	**MASCO INDUSTRIES** Taylor, Mich.	1,651.5	12.3	82.1	249	85.3	2,121.4	176	369.0	291
237	269	**OUTBOARD MARINE** Waukegan, Ill.[6]	1,605.1	24.5	77.6	254	25.6	1,141.1	262	579.6	232
238	264	**DOW JONES** New York	1,603.1	22.0	228.2	128	12.4	2,111.8	179	1,160.6	137
239	297	**TYCO LABORATORIES** Exeter, N.H.[5]	1,602.3	43.6	66.5	272	148.0	941.3	296	293.0	333
240	265	**SONOCO PRODUCTS** Hartsville, S.C.	1,599.8	21.9	96.3	225	56.6	977.5	289	454.5	263
241	334	**PRIME COMPUTER** Natick, Mass.[37]	1,594.6	65.9	19.0	391	(70.7)	1,850.9	212	541.7	238
242	240	**WITCO** New York	1,585.9	11.1	91.9	233	45.2	1,114.6	266	578.3	233
243	246	**HOLLY FARMS** Memphis[8]	1,583.2	12.6	36.2	336	(49.5)	756.6	336	386.0	287
244	237	**AVERY INTERNATIONAL** Pasadena, Calif.[38]	1,582.0	7.9	77.7	253	123.7	1,119.1	264	509.4	245
245	280	**TIMKEN** Canton, Ohio	1,554.1	26.3	65.9	275	538.7	1,593.0	217	973.7	162
246	245	**RELIANCE ELECTRIC** Cleveland	1,552.0¶	10.2	24.0	375	500.0	1,367.0	243	132.0	421
247	238	**DEAN FOODS** Franklin Park, Ill.[8]	1,551.8	8.2	42.8	317	4.1	499.1	404	265.7	345
248	242	**PENN CENTRAL** Cincinnati	1,546.5	8.8	103.4	213	185.6	2,400.3	165	1,769.9	91
249	256	**ADOLPH COORS** Golden, Colo.	1,521.7*	12.7	46.9	306	(2.6)	1,570.8	220	1,062.1	151
250	244	**CHICAGO PACIFIC** Chicago[39]	1,500.0[28]	6.2	N.A.		–	N.A.		N.A.	

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF SALES		ASSETS		STOCKHOLDERS' EQUITY		EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS 1988		1978-88 annual average		INDUSTRY TABLE NUMBER	RANK
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	% change from 1987	1978-88 annual growth rate %	Rank	%	Rank	%	Rank		1988
3,023.2	99	70.6	1	32.9	4	114.3	2	37.58**	5,346.4	31.2	5	4.8	298	21.4	114	18	201
2,616.5	114	12.4	50	16.1	28	31.3	35	6.30	75.5	–		7.7	269	–		6	202
1,064.7	222	4.9	249	6.1	252	10.3	341	2.50	22.0	1.7	289	7.2	273	2.0	358	7	203
543.4	317	3.4	328	5.7	273	–		3.19	(77.8)	4.5	255	(22.4)	412	14.2	245	1	204
5,416.9	56	20.0	10	5.9	269	11.7	319	348.23	70.3	24.7	16	59.3	37	40.4	4	20	205
N.A.		1.1	416	0.8	424	3.2	405	N.A.	–	–		–		–		7	206
1,155.4	211	10.4	71	9.3	127	15.6§	233	4.92	(7.9)	11.3	139	(1.1)	339	9.3	315	15	207
1,882.9	154	7.5	137	10.7	88	19.7	141	2.22	34.1	13.4	99	(5.9)	363	21.4	112	11	208
1,151.4	212	5.2	231	8.0	166	16.8	205	2.30	7.0	37.5	3	6.5	278	29.3	32	5	209
639.5	296	3.5	325	3.5	364	9.8	350	6.04	52.9	7.5	201	15.5	202	15.4	225	1	210
2,256.9	130	15.9	24	8.3	160	28.5	45	4.13	22.2	24.9	15	22.8	153	19.9	135	5	211
973.1	240	4.2	294	9.2	135	23.9	75	1.11	4.7	20.2	29	34.3	89	37.7	7	8	212
1,793.2	159	7.3	142	10.1	99	18.8	160	2.66	29.1	14.2	85	6.6	277	22.0	100	14	213
982.0	238	4.6	266	6.1	247	12.9	301	2.54	15.5	3.3	274	(11.9)	384	17.9	179	11	214
1,385.3	188	5.4	221	7.4	194	14.8	253	2.40	20.0	7.5	203	13.8	218	17.9	176	14	215
2,124.9	137	8.3	120	11.9	67	31.6	33	2.07	8.4	11.7	127	(9.5)	375	20.2	131	7	216
1,160.2	208	15.7	26	16.7	26	26.3	56	7.84**	139.8	2.9	277	12.0	236	10.8	299	9	217
3,071.3	96	(1.2)	445	(1.2)	447	(2.2)	424	(0.34)	(118.1)	–		58.9	38	6.9	336	22	218
N.A.		–		–		–		N.A.	–	–		–		–		9	219
2,048.9	144	8.8	111	7.8	179	16.9	202	4.01	12.3	11.2	143	3.6	310	15.3	226	22	220
1,278.6	197	5.1	237	8.7	150	14.4	263	3.37	17.7	9.3	174	31.5	105	16.5	207	14	221
684.3	286	2.9	355	4.7	325	9.8	353	2.98	(4.8)	9.4	172	7.1	274	21.1	119	24	222
3,233.3	92	10.2	75	10.5	91	20.1	132	3.83	17.1	11.5	131	32.9	98	21.7	104	20	223
476.2	335	3.0	352	6.3	235	15.1	247	2.14	2,957.1	–		79.5	19	–		18	224
1,287.7	196	6.5	169	8.5	159	19.2	151	5.88	13.1	6.2	224	15.3	203	10.8	298	18	225
1,887.5	152	12.4	49	11.6	71	22.1	101	2.08	47.5	3.8	265	15.5	201	6.6	338	6	226
953.0	244	1.4	408	1.8	407	5.5	392	0.91	(63.0)	(11.0)	341	4.9	295	9.9	310	7	227
2,074.5	141	9.6	90	8.8	146	19.2	153	2.08	6.1	25.2	13	(12.0)	385	21.7	105	20	228
1,156.3	210	9.4	95	11.3	76	21.6	108	6.34	32.6	11.6	130	4.1	304	14.9	235	9	229
2,541.4	116	21.8	7	19.6	16	27.5	52	5.71	51.5	–		18.4	184	–		5	230
363.5	356	1.9	390	4.2	342	9.4§	356	2.20	(37.9)	1.6	286	7.8	266	15.0	231	8	231
1,173.7	207	3.6	320	3.9	349	9.9	346	2.24	115.4	3.9	263	20.2	171	17.8	182	5	232
1,390.8	186	7.2	145	8.9	140	18.7	162	4.44	26.2	4.7	251	(4.5)	358	15.0	230	7	233
N.A.		5.5	218	9.3	130	–		N.A.	–	–		–		–		1	234
N.A.		–		–		–		N.A.	–	–		–		–		8	235
788.0	276	5.0	244	3.9	353	22.2	98	0.93	106.7	–		9.0	257	–		17	236
648.7	294	4.8	251	6.8	220	13.4	291	4.04	19.5	9.9	163	45.3	60	18.2	169	27	237
3,113.4	95	14.2	37	10.8	85	19.7	142	2.35	11.9	17.3	49	0.8	327	21.3	116	20	238
1,547.6	171	4.1	296	7.1	207	22.7	91	1.93	150.6	14.7	79	58.5	40	36.5	9	15	239
1,558.0	170	6.0	190	9.8	106	21.2	114	2.20	57.1	15.8	64	65.1	34	31.2	22	9	240
900.2	255	1.2	412	1.1	419	3.5	402	0.39	(70.5)	6.1	228	12.9	229	14.6	238	6	241
851.4	265	5.8	206	8.2	162	15.9	226	3.86	41.9	8.4	183	9.1	254	19.8	138	5	242
1,103.6	215	2.3	379	4.8	322	9.4	357	2.06	(52.2)	4.3	256	113.5	7	24.2	75	8	243
1,003.5	232	4.9	245	6.9	212	15.3	243	1.77	118.5	13.8	91	9.5	250	22.8	92	9	244
994.3	236	4.2	293	4.1	344	6.8	374	2.34	500.0	(5.3)	330	20.3	169	7.7	329	11	245
N.A.		1.5	404	1.8	409	18.2	176	N.A.	–	–		–		–		7	246
792.1	275	2.8	359	8.6	156	16.1	220	1.60	3.9	13.8	92	23.8	146	29.5	31	8	247
1,641.5	166	6.7	164	4.3	339	5.8	389	1.46	534.8	–		16.3	195	18.7	160	15	248
673.9	288	3.1	345	3.0	381	4.4	399	1.28	(3.0)	(2.0)	316	21.6	162	7.1	334	3	249
N.A.		–		–		–		N.A.	–	–		162.0	3	–		7	250

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RANK 1988	RANK 1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
251	254	**SUNDSTRAND** Rockford, Ill.	1,477.3	8.2	(76.6)	465	(321.3)	1,567.0	221	590.5	230
252	266	**DOW CORNING** Midland, Mich.	1,476.8	13.3	150.5	169	11.5	1,528.8	224	796.3	185
253	235	**MURPHY OIL** El Dorado, Ark.	1,473.6	0.0	38.8	327	–	2,068.2	184	761.4	188
254	219	**INT'L MINERALS & CHEMICAL** Northbrook, Ill.[4]	1,470.6	(10.2)	113.5**	198	437.9	1,793.8	201	1,027.7	153
255	270	**CRANE** New York	1,451.9¶	13.1	62.5	278	5.4	681.7	352	274.6	341
256	396	**LORAL** New York[34]	1,440.8	108.8	74.3	258	29.4	1,414.8	234	438.3	269
257	281	**E-SYSTEMS** Dallas	1,439.0	17.3	74.6	257	23.5	758.2	333	490.9	251
258	259	**PERKIN-ELMER** Norwalk, Conn.[10]	1,428.6¶	7.1	71.8	261	–	1,368.7	242	722.2	196
259	267	**NORTEK** Providence	1,425.4¶	9.4	19.6**	387	–	1,052.2	281	234.9	364
260	261	**NATIONAL SERVICE INDUSTRIES** Atlanta[24]	1,414.2	6.6	86.1	243	13.8	825.3	318	558.2	236
261	249	**TEKTRONIX** Beaverton, Ore.[5]	1,411.9	1.1	(16.7)	446	(132.6)	1,024.3	282	497.5	250
262	279	**BOWATER** Darien, Conn.	1,410.4	14.6	164.3	155	102.5	1,880.5	196	826.9	180
263	●	**LORILLARD** New York[39]	1,410.3*	8.0	368.2	82	0.2	929.1	299	448.7	268
264	272	**NORTON** Worcester, Mass.	1,410.1	11.8	95.6**	226	43.8	1,088.0	271	582.1	231
265	277	**EG&G** Wellesley, Mass.	1,406.3	13.8	68.7	268	23.8	539.3	391	332.3	312
266	273	**FLEETWOOD ENTERPRISES** Riverside, Calif.[16]	1,406.0	11.6	48.2	304	21.4	514.0	397	343.9	307
267	276	**ESSELTE BUSINESS SYS.** Garden City, N.Y.[40]	1,401.2	12.8	58.9	288	2.8	1,072.7	277	466.7	259
268	260	**WEIRTON STEEL** Weirton, W.Va.	1,383.9	4.1	75.0	255	(6.9)	765.5	331	286.9	334
269	263	**WASHINGTON POST** Washington, D.C.	1,367.6	4.0	269.1	112	44.1	1,422.3	231	868.2	173
270	275	**INSPIRATION RESOURCES** New York	1,366.2	9.9	42.0	319	69.4	841.3	313	414.6	274
271	252	**ARVIN INDUSTRIES** Columbus, Ind.	1,365.3	(0.6)	3.5	427	(92.5)	1,058.1	279	408.5	276
272	271	**DATA GENERAL** Westboro, Mass.[6]	1,364.7	7.1	(15.5)	445	–	1,077.7	274	611.9	225
273	262	**HASBRO** Pawtucket, R.I.	1,340.3	1.1	72.4	259	50.2	1,111.9	267	703.2	201
274	247	**FIELDCREST CANNON** Eden, N.C.	1,338.2	(4.4)	11.3	414	–	811.9	321	264.2	346
275	367	**CYPRUS MINERALS** Englewood, Colo.	1,327.1	66.9	170.6	152	550.1	1,650.7	213	1,204.0	132
276	258	**WILSON FOODS** Oklahoma City[10]	1,324.0	(1.8)	6.6	423	17.9	218.9	485	78.1	448
277	340	**GENERAL INSTRUMENT** New York[9]	1,315.5¶	38.9	66.2	274	–	1,093.6	270	551.0	237
278	318	**TANDEM COMPUTERS** Cupertino, Calif.[6]	1,314.7	27.0	94.5	227	(10.5)	1,318.4	248	856.9	176
279	283	**LAFARGE** Reston, Va.[41]	1,309.2	7.2	93.5	229	24.6	1,199.4	255	682.1	208
280	293	**AM INTERNATIONAL** Chicago[18]	1,297.4¶	11.6	(20.4)	448	(263.3)	776.9	328	232.5	367
281	299	**ECHLIN** Branford, Conn.[34]	1,294.3	17.7	62.1	279	36.0	1,086.6	272	634.3	220
282	291	**HARSCO** Wormleysburg, Pa.	1,279.0	9.4	31.1	351	(50.9)	893.1	303	421.3	272
283	315	**CLARK EQUIPMENT** South Bend, Ind.	1,278.3	22.0	46.1**	308	–	951.6	293	407.0	277
284	294	**CERTAINTEED** Valley Forge, Pa.[42]	1,266.6	9.3	56.8	291	(7.5)	1,107.5	268	734.8	194
285	335	**SEAGATE TECHNOLOGY** Scotts Valley, Calif.[4]	1,266.0	32.1	77.3	255	(44.7)	1,094.0	269	436.4	270
286	296	**CLOROX** Oakland[4]	1,259.9	11.9	132.6	185	26.4	1,156.0	258	712.9	200
287	295	**FARMERS UNION CENTRAL EXCH.** St. Paul[6]	1,259.4	10.6	N.A.		–	606.0	369	285.3	337
288	301	**JEFFERSON SMURFIT** St. Louis[43]	1,255.3	14.2	144.5	177	57.1	816.9	320	312.9	320
289	303	**CYCLOPS INDUSTRIES** Pittsburgh	1,250.8¶	13.9	28.6	359	–	514.6	396	34.6	463
290	333	**YORK HOLDINGS** York, Pa.[44]	1,235.5	28.3	(72.7)	464	(363.2)	1,016.0	284	(16.3)	471
291	289	**PENNWALT** Philadelphia	1,226.2¶	2.5	178.7	149	240.7	949.5	295	225.8	370
292	251	**NATIONAL GYPSUM** Dallas[41]	1,220.9	(11.5)	(79.6)‡	466	–	1,610.0	215	77.3	449
293	●	**E.W. SCRIPPS** Wilmington, Del.	1,214.5	5.9	70.1	264	18.1	1,556.3	222	628.1	222
294	350	**ALLEGHENY LUDLUM** Pittsburgh	1,207.5	39.3	108.6	206	135.0	703.9	349	225.6	371
295	320	**FIGGIE INTERNATIONAL** Willoughby, Ohio	1,200.2	17.4	61.9	280	25.4	1,022.0	283	365.8	292
296	339	**DELUXE** St. Paul[45]	1,196.0	26.2	143.4	178	(3.5)	786.1	326	567.7	234
297	323	**RUBBERMAID** Wooster, Ohio	1,193.5	17.6	99.3	220	17.5	781.7	327	511.4	244
298	314	**HARNISCHFEGER INDUSTRIES** Brookfield, Wis.[7]	1,187.5	13.2	14.4‡	402	(37.1)	1,194.7	256	461.4	260
299	312	**LIZ CLAIBORNE** New York	1,184.2	12.4	110.3	202	(3.6)	629.1	367	457.8	262
300	308	**MCCORMICK** Hunt Valley, Md.[33]	1,183.9	9.8	42.7	318	39.6	770.2	330	294.3	330

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate		1988		1978-88 annual average			
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	%	Rank	%	Rank		1988
1,024.1	228	(5.2)	462	(4.9)	459	(13.0)	436	(4.15)	(324.3)	–		22.0	159	12.7	268	1	251
N.A.		10.2	76	9.8	107	18.9	158	N.A.	–	–		–		–		5	252
1,240.6	200	2.6	363	1.9	403	5.1	394	1.14	–	(0.9)	308	33.1	95	10.5	302	18	253
877.6	262	7.7	135	6.3	236	11.0	331	3.66**	1,080.6	(1.8)	315	(17.1)	400	11.0	297	5	254
540.3	319	4.3	287	9.2	134	22.8	90	2.78	5.7	9.6	169	35.6	83	17.4	190	11	255
919.7	252	5.2	233	5.3	291	17.0	198	3.01	28.1	15.5	67	4.3	301	18.3	165	7	256
915.3	253	5.2	232	9.8	108	15.2	246	2.40	23.1	15.4	69	12.3	232	22.8	93	7	257
966.8	242	5.0	242	5.2	292	9.9	347	[illegible].51	–	6.2	225	5.1	292	8.1	326	22	258
128.6	418	1.4	410	1.9	405	8.3	364	1.34**	–	4.6	254	32.1	102	3.7	351	4	259
1,188.3	206	6.1	188	10.4	93	15.4	240	1.75	13.6	11.5	133	4.6	300	24.9	69	7	260
637.0	298	(1.2)	444	(1.6)	449	(3.4)	427	(0.55)	(141.4)	–		(15.5)	396	0.2	360	22	261
985.7	237	11.7	56	8.7	149	19.9	136	4.37	105.2	–		(4.5)	357	–		9	262
N.A.		26.1	4	39.6	3	82.0	5	N.A.	–	–		–		–		25	263
1,313.5	231	6.8	159	8.8	144	16.4	214	4.55**	42.2	1.9	285	8.1	265	11.8	282	4	264
952.8	245	4.9	248	12.7	59	20.7	122	2.30	15.0	14.1	86	(11.9)	383	16.5	209	22	265
632.8	300	3.4	327	9.4	124	14.0	273	2.08	22.4	10.3	155	46.9	55	20.0	134	27	266
720.6	280	4.2	295	5.5	280	12.6	306	2.87	2.9	–		(3.8)	353	–		9	267
N.A.		5.4	222	9.8	109	26.1	58	N.A.	–	–		–		–		15	268
2,765.6	109	19.7	12	18.9	18	31.0	38	20.91	44.0	21.2	23	13.6	220	26.2	60	20	269
580.1	310	3.1	347	5.0	314	10.1	343	0.63	65.8	–		1.9	324	–		5	270
434.2	343	0.3	431	0.3	431	0.9	418	0.01	(99.6)	(40.1)	350	4.0	305	17.3	195	17	271
500.5	331	(1.1)	443	(1.4)	448	(2.5)	425	(0.55)	–	–		(21.7)	411	(4.8)	369	6	272
968.2	241	5.4	223	6.5	228	10.3	342	1.24	51.2	–		18.9	180	54.3	1	26	273
235.9	387	0.8	419	1.4	415	4.3	400	1.10	–	(9.7)	339	42.9	67	10.7	301	24	274
1,050.3	223	12.8	46	10.3	96	14.1	271	6.31	518.6	–		34.9	86	–		16	275
145.5	410	0.5	424	3.0	380	8.5	361	0.65	(3.0)	–		88.5	15	–		8	276
1,019.5	230	5.0	240	6.1	255	12.0	315	2.01	–	7.1	206	(13.0)	388	12.9	266	7	277
1,845.8	156	7.2	144	7.2	200	11.0	332	0.96	(11.1)	28.5	6	(38.6)	423	23.4	84	6	278
811.3	273	7.1	146	7.8	181	13.7§	282	1.96	18.8	–		42.4	68	–		4	279
294.3	375	(1.6)	449	(2.6)	453	(11.7)	435	(0.53)	(581.8)	–		5.3	290	(13.3)	374	11	280
912.1	254	4.8	256	5.7	272	9.8	351	1.12	27.3	5.6	237	22.2	158	11.2	296	17	281
664.5	292	2.4	370	3.5	365	7.4	371	1.17	(46.8)	(3.1)	323	4.8	296	16.9	202	14	282
586.5	309	3.6	318	4.8	321	11.3	328	2.70**	–	(7.8)	336	27.5	123	2.2	356	11	283
N.A.		4.5	270	5.1	306	7.7	370	2.99	(7.4)	(0.8)	306	–		–		4	284
503.8	328	6.1	187	7.1	205	17.7	185	1.54	(45.2)	–		(42.0)	426	–		6	285
1,785.3	160	10.5	69	11.5	74	18.6	165	2.46	25.5	12.4	114	16.6	191	25.0	67	23	286
N.A.		–		–		–		N.A.	–	–		–		–		18	287
1,220.1	204	11.5	58	17.7	23	46.2	14	3.72	56.0	–		14.4	210	–		9	288
175.8	400	2.3	380	5.6	277	82.6	4	4.15	–	–		(7.4)	369	–		15	289
N.A.		(5.9)	464	(7.2)	461	–		N.A.	–	–		121.4	6	–		11	290
939.7	249	14.6	33	18.8	19	79.1	7	14.34	256.7	12.2	117	139.4	4	19.2	147	5	291
N.A.		(6.5)	466	(4.9)	460	(103.0)	449	N.A.	–	–		–		–		4	292
1,447.0	182	5.8	208	4.5	333	11.2	329	0.93	13.4	–		–		–		20	293
886.1	258	9.0	104	15.4	36	48.2	13	4.81	111.9	–		38.8	73	–		15	294
676.1	287	5.2	234	6.1	256	16.9	199	9.03	28.6	14.5	82	22.6	156	27.3	46	11	295
2,298.8	128	12.0	51	18.2	21	25.3	60	1.68	(3.4)	17.1	53	6.2	279	24.8	71	20	296
1,930.4	148	8.3	119	12.7	61	19.4	148	1.35	17.4	16.0	60	2.6	320	27.6	41	21	297
529.6	322	1.2	411	1.2	418	3.1	406	0.51‡	(46.9)	(12.8)	344	(9.7)	376	2.4	355	11	298
1,492.1	177	9.3	97	17.5	24	24.1	72	1.26	(4.5)	–		5.7	284	–		2	299
590.6	308	3.6	319	5.5	278	14.5	259	1.83	41.3	9.5	171	56.8	41	17.8	183	8	300

THE FORTUNE

LARGEST U.S. INDUSTRIAL

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
301	288	**ARMTEK** Williamsville, N.Y.[6]	1,179.9	(1.5)	8.5	421	(58.6)	588.3	375	258.9	348
302	309	**FEDERAL-MOGUL** Southfield, Mich.	1,176.9	9.4	41.7	321	1.3	811.3	322	362.0	295
303	298	**AMERICAN GREETINGS** Cleveland[9]	1,174.8	6.6	33.4	344	(47.3)	1,150.3	259	538.7	241
304	307	**HARTMARX** Chicago[33]	1,174.3	8.7	38.0	330	(7.9)	734.1	343	358.5	297
305	332	**VARIAN ASSOCIATES** Palo Alto, Calif.[6]	1,170.6	19.1	27.8	361	29.9	855.8	310	451.0	266
306	286	**DWG** Miami Beach[16]	1,167.9	(3.8)	36.3	335	99.2	913.0	301	159.3	401
307	317	**GERBER PRODUCTS** Fremont, Mich.[34]	1,165.6¶	11.5	21.2	382	(25.6)	726.5	344	325.9	315
308	305	**CROWN CENTRAL PETROLEUM** Baltimore	1,149.3	5.8	38.4	328	20.8	442.9	423	295.1	328
309	290	**TOSCO** Santa Monica, Calif.	1,142.5	(3.8)	90.4**	235	70.8	556.3	386	268.8	344
310	274	**UNION TEXAS PETROLEUM HOLDINGS** Houston	1,136.5	(9.6)	109.3	205	95.4	1,716.8	209	171.2	397
311	328	**ADVANCED MICRO DEVICES** Sunnyvale, Calif.	1,125.9	12.9	19.3	389	–	1,081.3	273	644.8	216
312	324	**LUBRIZOL** Wickliffe, Ohio	1,117.5	10.3	140.0	181	72.1	970.7	290	664.3	212
313	319	**FEDERAL PAPER BOARD** Montvale, N.J.	1,116.9	8.9	143.3	179	117.9	1,335.3	246	641.3	217
314	326	**WHEELING-PITTSBURGH STEEL** Wheeling	1,103.0	10.1	258.5**	116	–	1,286.4	249	(24.1)	473
315	341	**RAYCHEM** Menlo Park, Calif.[4]	1,094.7	15.9	125.3	191	70.2	1,149.0	260	722.2	197
316	337	**TECUMSEH PRODUCTS** Tecumseh, Mich.	1,093.5	15.0	70.2	263	(2.0)	900.0	302	618.0	224
317	330	**POTLATCH** San Francisco	1,084.1	9.3	112.4	201	28.2	1,417.7	233	722.0	198
318	311	**BALL** Muncie, Ind.	1,073.0	1.8	50.5	302	(23.8)	876.5	308	421.4	271
319	342	**BEMIS** Minneapolis	1,069.0	15.0	39.6	325	24.0	595.0	373	237.4	362
320	302	**BROWN-FORMAN** Louisville, Ky.[16]	1,066.6*	(2.9)	103.4	214	15.4	932.3	298	454.4	264
321	344	**ARISTECH CHEMICAL** Pittsburgh	1,065.2	15.9	188.2	147	170.0	676.1	353	410.4	275
322	327	**A.O. SMITH** Milwaukee	1,063.2	6.4	19.0	390	3.0	807.7	323	293.3	332
323	352	**NUCOR** Charlotte, N.C.	1,061.4	24.7	109.4	204	116.6	949.7	294	532.3	242
324	392	**GEORGIA GULF** Atlanta	1,060.6	49.9	193.6	144	136.5	457.3	420	256.1	351
325	248	**AMSTAR** Stamford, Conn.[4]	1,057.3	(24.5)	(5.7)	438	(124.3)	642.4	363	62.8	454
326	310	**VULCAN MATERIALS** Birmingham, Ala.	1,053.2	(0.9)	136.0	182	17.0	957.6	292	634.3	219
327	463	**SUN MICROSYSTEMS** Mountain View, Calif.[4]	1,051.6	95.6	66.4	273	83.0	757.2	335	370.0	290
328	232	**GOLD KIST** Atlanta[4]	1,043.7	(30.4)	N.A.		–	489.2	410	201.3	380
329	343	**RORER GROUP** Fort Washington, Pa.	1,041.6	12.1	61.8	281	13.8	1,388.0	239	449.7	267
330	500	**M.A. HANNA** Cleveland	1,019.0	121.8	83.2	247	129.4	963.9	291	469.1	258
331	336	**MACMILLAN** New York[46]	1,019.0[20]	6.6	N.A.		–	N.A.		N.A.	
332	349	**FERRO** Cleveland	1,009.0	15.8	46.6	307	47.1	588.1	376	295.3	327
333	325	**FRUIT OF THE LOOM** Chicago	1,004.7	(0.8)	67.6	270	–	1,830.4	197	257.6	350
334	300	**TYLER** Dallas	995.7¶	(9.4)	21.0	384	74.6	348.5	454	51.6	459
335	354	**NALCO CHEMICAL** Naperville, Ill.	994.1	18.1	106.0	208	32.0	838.9	315	477.5	257
336	373	**FUQUA INDUSTRIES** Atlanta	993.2	28.6	92.7	232	47.2	1,146.0	261	399.9	280
337	322	**MATTEL** Hawthorne, Calif.	990.0	(3.0)	35.9	337	–	693.4	351	130.9	423
338	386	**NEWELL** Freeport, Ill.	988.2	37.3	61.4	282	65.0	820.0	319	400.3	279
339	355	**BAUSCH & LOMB** Rochester, N.Y.	978.3	16.4	97.9	222	14.7	1,210.9	252	629.0	221
340	374	**ANCHOR GLASS CONTAINER** Tampa	977.8	27.6	(8.5)	441	(142.5)	773.4	329	77.1	450
341	250	**ALLEGHENY INTERNATIONAL** Pittsburgh[6]	967.8	(30.4)	(25.1)	452	–	840.6	314	(281.8)	481
342	356	**GAF** Wayne, N.J.	961.4	14.9	100.3	219	(57.8)	1,421.1	232	623.5	223
343	359	**AMSTED INDUSTRIES** Chicago[6]	960.4	16.7	11.3	413	–	578.1	381	84.2	438
344	395	**SHAW INDUSTRIES** Dalton, Ga.[4]	958.3	38.0	33.8	343	18.4	546.3	389	157.1	402
345	363	**CF INDUSTRIES** Long Grove, Ill.	957.8	18.3	N.A.		–	991.4	287	494.1	254
346	351	**A.H. ROBINS** Richmond	933.8	9.1	58.4	290	–	1,074.8	275	(1,505.4)	486
347	347	**SAVANNAH FOODS & INDUSTRIES** Savannah	916.9	4.3	20.1	385	43.0	395.1	442	134.5	419
348	316	**SMITHFIELD FOODS** Smithfield, Va.[16]	916.3	(12.5)	16.6	396	152.0	130.9	488	39.2	462
349	415	**COOPER COS.** Palo Alto, Calif.[7]	915.7	45.9	(207.4)	471	(498.9)	1,137.6	263	47.8	460
350	369	**BRIGGS & STRATTON** Wauwatosa, Wis.[4]	914.1	16.5	30.2	354	13.5	510.6	400	303.3	325

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS					RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	%	Rank	%	Rank		1988
N.A.		0.7	421	1.4	414	3.3	404	0.82	(60.6)	(4.2)	327	–		–		21	301
637.8	297	3.5	322	5.1	305	11.5	325	3.33	2.8	1.6	290	47.7	59	19.4	144	17	302
740.2	278	2.8	357	2.9	387	6.2	381	1.04	(47.2)	3.6	269	53.4	45	17.9	178	20	303
511.1	325	3.2	340	5.2	301	10.6	336	2.03	1.0	8.1	187	7.7	267	22.8	89	2	304
547.5	316	2.4	373	3.2	377	6.2	384	1.27	29.6	4.6	253	16.0	199	16.9	201	7	305
127.5	419	3.1	344	4.0	348	22.8	88	1.11	91.4	12.6	111	–		18.1	170	24	306
1,274.6	198	1.8	393	2.9	386	6.5	378	1.07	(24.6)	(2.0)	317	75.0	24	24.5	73	8	307
170.4	402	3.3	331	8.7	151	13.0	296	4.70	24.3	2.6	281	48.7	56	9.3	317	18	308
183.4	399	7.9	129	16.3	27	33.6	28	1.32**	109.5	4.7	249	78.6	21	(5.5)	370	18	309
1,037.0	225	9.6	89	6.4	232	40.0§	21	0.73	1,360.0	–		31.6	104	–		16	310
689.5	284	1.7	400	1.8	408	3.0	407	0.11	–	(1.7)	314	(12.7)	387	13.6	258	7	311
1,434.9	183	12.5	48	14.4	44	21.1	115	3.62	75.7	6.2	223	13.0	227	9.0	320	5	312
997.3	235	12.8	45	10.7	86	22.3	96	3.51	114.7	–		4.9	294	17.4	194	9	313
69.0	430	23.4	5	20.1	12	–		48.69**	–	27.7	8	29.6	115	(1.2)	363	15	314
1,213.0	205	11.4	59	10.9	82	17.3	190	3.69	64.2	17.9	47	(20.9)	409	13.1	263	7	315
793.2	274	6.4	171	7.8	180	11.4	327	12.84	(1.9)	3.5	272	13.8	216	15.0	232	11	316
925.0	251	10.4	73	7.9	173	15.6	235	4.04	29.1	6.7	216	13.2	224	11.9	281	9	317
633.9	299	4.7	259	5.8	271	12.0	316	2.17	(22.5)	8.5	182	(18.5)	404	22.0	101	14	318
691.1	283	3.7	314	6.7	222	16.7	208	1.48	25.4	11.9	122	23.7	147	30.1	27	9	319
1,713.6	162	9.7	88	11.1	79	22.8	89	3.25	16.9	14.8	77	68.6	30	20.9	121	3	320
943.2	248	17.7	19	27.8	5	45.9	15	7.57	179.3	–		6.8	276	–		5	321
170.1	403	1.8	397	2.4	390	6.5	380	1.86	6.9	(6.6)	332	24.6	139	6.4	340	17	322
997.9	233	10.3	74	11.5	72	20.6	124	5.16	115.9	14.8	78	21.7	161	22.4	97	15	323
1,094.9	217	18.3	16	42.3	2	75.6	9	6.75	140.6	–		43.0	65	–		5	324
N.A.		(0.5)	436	(0.9)	442	(9.1)	432	N.A.	–	–		–		–		8	325
1,766.8	161	12.9	43	14.2	46	21.4	110	3.30	20.7	11.5	132	30.0	114	23.9	79	16	326
1,233.1	202	6.3	174	8.8	145	18.0	182	1.79	61.3	–		(0.7)	335	–		6	327
N.A.		–		–		–		N.A.	–	–		–		–		8	328
1,240.5	201	5.9	195	4.5	334	13.8	280	1.96	17.4	8.0	190	82.0	17	17.9	177	19	329
509.3	326	8.2	124	8.6	153	17.7	183	3.48	111.3	6.1	226	51.6	49	3.1	352	5	330
N.A.		–		–		–		N.A.	–	–		62.8	35	38.8	5	20	331
483.0	334	4.6	263	7.9	172	15.8	231	3.40	47.8	6.4	221	51.2	50	15.9	216	21	332
484.7	333	6.7	161	3.7	358	26.2	57	1.10	–	–		27.5	122	–		2	333
144.9	411	2.1	386	6.0	259	40.7	20	1.11	63.2	0.4	298	52.4	47	9.6	313	14	334
1,378.7	190	10.7	68	12.6	62	22.2	100	2.70	33.0	10.6	152	10.4	246	14.9	236	5	335
645.6	295	9.3	96	8.1	164	23.2	82	4.29	46.9	22.5	20	6.1	281	33.9	17	11	336
502.6	329	3.6	316	5.2	300	27.5	53	0.75	–	(7.1)	334	38.2	75	3.9	349	26	337
717.3	281	6.2	182	7.5	190	15.3	242	2.18	58.5	18.8	38	106.0	11	35.8	11	14	338
1,400.7	185	10.0	81	8.1	165	15.6	234	3.27	16.4	9.9	162	28.2	121	19.6	140	22	339
151.2	409	(0.9)	440	(1.1)	445	(11.0)	434	(0.61)	(142.1)	–		(48.3)	427	–		4	340
17.6	434	(2.6)	456	(3.0)	454	–		(5.10)	–	–		(40.9)	424	(16.7)	376	7	341
1,426.8	184	10.4	70	7.1	206	16.1	219	3.51	(49.6)	11.9	124	3.6	311	26.5	52	5	342
N.A.		1.2	413	2.0	401	6.2§	383	0.56	–	–		–		–		15	343
393.3	350	3.5	324	6.2	246	21.5	109	2.13	25.3	20.2	28	49.4	54	33.7	18	24	344
N.A.		–		–		–		N.A.	–	–		–		–		5	345
652.4	293	6.3	178	5.4	281	–		2.42	–	7.7	195	25.6	133	14.1	248	19	346
319.3	366	2.2	382	5.1	310	14.9§	252	1.50	(28.9)	7.8	193	34.2	91	34.8	14	8	347
95.1	426	1.8	394	12.7	60	42.5	18	3.72	151.4	10.8	147	36.6	81	29.6	30	8	348
102.3	423	(22.7)	473	(18.2)	470	(456.4)	454	(9.39)	(511.8)	–		(36.2)	422	–		22	349
403.2	348	3.3	334	5.9	264	10.0	345	2.09	13.6	(2.1)	318	12.2	233	6.8	337	11	350

THE FORTUNE

LARGEST U.S. INDUSTRIAL

RANK 1988	RANK 1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
351	400	**AG PROCESSING** Omaha[24]	910.2	34.6	N.A.		–	227.3	482	97.8	433
352	419	**MAGNETEX** Los Angeles[4]	908.7	49.4	19.5	388	301.2	579.7	378	27.8	465
353	404	**ROHR INDUSTRIES** Chula Vista, Calif.[10]	906.8	36.7	32.5	348	20.7	882.7	306	374.7	289
354	362	**WORTHINGTON INDUSTRIES** Columbus, Ohio[8]	904.2	10.4	56.1	295	33.1	506.6	402	286.2	335
355	382	**CONSOLIDATED PAPERS** Wisconsin Rapids, Wis.	896.8	20.7	149.9	171	56.5	934.6	297	717.4	199
356	358	**INTERLAKE** Oak Brook, Ill.	892.2	8.4	39.6	326	(27.3)	660.5	359	269.9	342
357	371	**WM. WRIGLEY JR.** Chicago	891.4	14.1	87.2	240	24.4	440.4	426	308.5	322
358	360	**MEMOREX TELEX** Tulsa[34,47]	890.2	8.3	(6.5)	439	(108.5)	1,390.9	238	(18.3)	472
359	384	**HILLENBRAND INDUSTRIES** Batesville, Ind.[33]	884.3	22.0	69.7	266	21.4	734.7	342	353.3	301
360	372	**SPX** Muskegon, Mich.[48]	877.7	13.4	44.9	310	72.0	702.4	350	321.4	316
361	338	**PACIFIC RESOURCES** Honolulu	876.9	(7.6)	40.1	323	552.4	511.6	398	232.9	366
362	379	**STORAGE TECHNOLOGY** Louisville, Colo.	874.0	16.5	44.2	312	70.1	847.5	311	284.4	338
363	353	**QUAKER STATE** Oil City, Pa.	862.1	2.5	14.9	399	–	739.9	340	314.7	318
364	357	**CINCINNATI MILACRON** Cincinnati	857.8	3.6	37.1**	334	–	721.5	346	227.3	368
365	380	**IBC HOLDINGS** Kansas City, Mo.[8,49]	855.0	14.1	(27.3)	454	(295.7)	646.4	361	11.1	468
366	378	**SNAP-ON TOOLS** Kenosha, Wis.	854.6	13.3	113.3	199	27.9	667.5	354	505.2	247
367	381	**INT'L FLAVORS & FRAGRANCES** New York	839.5	12.6	128.7	188	20.2	882.3	307	695.4	205
368	•	**SHELLER-GLOBE** Toledo	835.4[20]	–	N.A.		–	N.A.		N.A.	
369	370	**DEXTER** Windsor Locks, Conn.	827.3	5.7	35.5	340	(17.0)	626.4	368	307.2	324
370	368	**PENTAIR** St. Paul	823.3	4.3	39.8	324	82.3	744.7	339	281.7	339
371	406	**LEGGETT & PLATT** Carthage, Mo.	809.9	24.7	37.7	331	0.7	477.6	412	245.4	360
372	409	**INTERGRAPH** Huntsville, Ala.	800.2	24.8	88.0	238	25.9	830.7	317	667.1	211
373	364	**MOHASCO** Fairfax, Va.	790.5	(2.0)	(18.1)	447	(242.4)	N.A.		N.A.	
374	329	**CHAMPION SPARK PLUG** Toledo	784.6	(21.2)	23.6	377	23.6	575.6	384	349.9	304
375	421	**VISTA CHEMICAL** Houston[6]	781.4	28.3	113.1	200	–	520.9	394	139.7	414
376	456	**SCI SYSTEMS** Huntsville, Ala.[4]	774.2	40.0	19.0	392	18.8	485.1	411	151.6	404
377	407	**PITTWAY** Northbrook, Ill.	771.1	18.8	37.3	332	15.2	601.7	371	334.7	311
378	414	**VALERO ENERGY** San Antonio	770.6	22.6	30.6	353	136.9	926.5	300	507.9	246
379	399	**EAGLE-PICHER INDUSTRIES** Cincinnati[33]	770.1	13.7	(465.8)	475	(1,264.8)	583.4	377	(267.5)	480
380	499	**WESTERN DIGITAL** Irvine, Calif.[4]	768.3	66.1	43.4**	314	(9.9)	550.7	388	255.0	352
381	393	**KAMAN** Bloomfield, Conn.	767.2	8.5	25.3	370	4.8	420.4	433	178.6	393
382	385	**OCEAN SPRAY CRANBERRIES** Lakeville, Mass.[24]	766.6	6.1	N.A.		–	464.4	417	172.6	396
383	408	**C.R. BARD** Murray Hill, N.J.	757.5	18.1	78.7	252	26.4	531.0	392	328.6	314
384	398	**HARLEY-DAVIDSON** Milwaukee	757.4	10.5	23.9‡	376	12.7	401.1	439	121.6	425
385	397	**CRAY RESEARCH** Minneapolis	756.3	10.0	156.6	165	6.5	991.4	286	676.8	210
386	388	**MEDIA GENERAL** Richmond	755.7	5.7	8.8	419	(79.5)	859.0	309	252.4	354
387	387	**INSILCO** Meriden, Conn.	753.2	4.9	N.A.		–	N.A.		N.A.	
388	365	**DANAHER** Washington, D.C.	752.4	(6.3)	44.0**	313	131.9	575.8	383	155.7	403
389	430	**MARION LABORATORIES** Kansas City, Mo.[4]	752.0	25.9	150.0	170	54.8	553.7	387	381.5	288
390	•	**STANDARD COMMERCIAL** Wilson, N.C.[34]	750.0	21.3	17.1	395	28.4	491.2	409	147.0	407
391	402	**COOPER TIRE & RUBBER** Findlay, Ohio	748.0	12.4	41.1	322	33.8	442.6	424	257.8	349
392	366	**FLOWERS INDUSTRIES** Thomasville, Ga.[4]	737.7	(7.5)	43.2	316	56.4	433.6	431	198.2	382
393	375	**UNITED MERCHANTS & MFRS.** New York[4]	722.8	(5.2)	(37.0)	457	–	457.3	419	61.9	455
394	391	**DENNISON MANUFACTURING** Framingham, Mass.	721.8	1.9	37.2	333	8.1	515.9	395	255.0	353
395	361	**LOUISIANA LAND & EXPLORATION** New Orleans	720.6	(12.0)	(33.3)	456	(234.3)	1,428.9	229	489.2	252
396	390	**UNIVERSAL FOODS** Milwaukee[6]	719.5	1.4	27.6	363	11.4	404.2	438	177.7	394
397	•	**REXENE** Dallas	719.1	39.4	129.5	186	66.0	511.0	399	219.1	374
398	439	**HERMAN MILLER** Zeeland, Mich.[8]	713.6	24.4	44.6	311	34.1	433.9	430	248.3	356
399	401	**CHESAPEAKE** Richmond	711.3	5.3	51.5	300	70.5	662.1	358	279.2	340
400	483	**ATARI** Sunnyvale, Calif.	705.2[1]	43.0	(84.8)	469	(247.7)	371.2	448	83.2	439

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF SALES		ASSETS		STOCKHOLDERS' EQUITY		EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS 1988		1978-88 annual average		RANK	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	% change from 1987	1978-88 annual growth rate %	Rank	%	Rank	%	Rank	INDUSTRY TABLE NUMBER	1988
N.A.		–		–		–		N.A.	–	–		–		–		8	351
N.A.		2.1	383	3.4	371	59.8§	10	34.58	650.1	–		–		–		7	352
616.9	301	3.6	321	3.7	359	8.7	360	1.85	20.9	(2.2)	319	72.9	26	12.8	267	1	353
893.0	257	6.2	183	11.1	80	19.6	145	1.37	34.3	15.0	75	37.7	77	18.2	168	15	354
1,525.7	176	16.7	22	16.0	29	20.9	119	3.44	56.4	12.7	108	26.0	129	23.4	85	9	355
435.5	342	4.4	274	6.0	262	14.7	257	3.75	(20.0)	15.5	68	2.8	317	22.7	94	11	356
1,459.7	181	9.8	84	19.8	14	28.3	46	2.18	29.4	12.5	113	7.7	270	18.0	173	8	357
N.A.		(0.7)	438	(0.5)	436	–		N.A.	–	–		–		–		6	358
997.6	234	7.9	132	9.5	118	19.7	137	1.86	23.2	15.6	66	25.4	135	26.6	49	14	359
509.3	327	5.1	236	6.4	231	14.0	274	3.64	71.7	8.1	189	34.3	90	18.2	167	17	360
318.5	367	4.6	267	7.8	178	17.2	194	2.11	1,306.7	11.5	135	37.2	78	11.4	292	18	361
456.5	339	5.1	238	3.2	293	15.6	236	0.19	72.7	(16.4)	346	(6.7)	367	(19.5)	377	6	362
468.1	337	1.7	399	2.0	397	4.7	397	0.57	–	(6.9)	333	15.0	207	9.8	312	18	363
562.7	314	4.3	285	5.1	304	16.3	217	1.52**	–	0.2	301	8.7	261	10.3	305	11	364
N.A.		(3.2)	458	(4.2)	457	(245.6)	453	N.A.	–	–		–		–		8	365
1,488.1	178	13.3	39	17.0	25	22.4	95	2.72	27.7	12.7	106	3.1	314	17.8	181	14	366
1,924.3	150	15.3	27	14.6	41	18.5	167	3.40	20.1	8.3	184	15.1	206	11.7	283	23	367
N.A.		–		–		–		N.A.	–	–		–		–		17	368
827.0	271	4.3	289	5.7	274	11.6	324	1.43	(16.9)	4.1	260	(2.0)	343	14.2	244	5	369
328.9	361	4.8	250	5.4	286	14.1	270	3.70	89.3	6.0	230	69.6	28	20.7	125	11	370
429.8	345	4.7	260	7.9	174	15.4	241	2.21	(3.1)	11.7	128	10.6	244	21.4	111	10	371
1,067.4	221	11.0	64	10.6	90	13.2	293	1.55	26.0	–		(15.2)	395	–		6	372
434.0	344	(2.3)	454	–		–		(1.35)	(246.7)	–		96.6	12	22.9	88	10	373
724.3	279	3.0	350	4.1	343	6.7	375	0.67	34.0	(7.4)	335	18.1	185	8.7	322	7	374
835.4	266	14.5	34	21.7	10	81.0	6	6.48	–	–		11.6	239	–		5	375
253.5	379	2.5	369	3.9	350	12.5	308	0.91	18.2	28.2	7	13.2	223	28.6	37	6	376
468.2	336	4.8	252	6.2	244	11.1	330	8.13	15.3	5.5	238	30.3	112	16.5	210	7	377
343.9	360	4.0	303	3.3	373	2.8§	408	0.54	800.0	–		77.5	22	–		18	378
166.9	405	(60.5)	477	(79.8)	475	–		(43.54)	(1,276.8)	–		(33.8)	421	1.4	359	17	379
322.9	363	5.7	213	7.9	175	17.0	195	1.53**	(23.5)	–		(9.2)	371	–		7	380
251.9	380	3.3	335	6.0	260	14.2	269	1.42	3.6	12.8	102	2.7	319	21.4	110	1	381
N.A.		–		–		–		N.A.	–	–		–		–		8	382
1,126.9	214	10.4	72	14.8	39	24.0	73	1.38	29.0	21.1	24	35.2	84	30.1	25	22	383
223.4	391	3.2	341	6.0	263	19.7	143	3.00‡	(8.3)	–		95.2	13	–		17	384
1,703.6	165	20.7	8	15.8	31	23.1	83	4.99	7.3	42.5	2	(14.1)	392	28.6	36	6	385
1,024.6	227	1.2	414	1.0	422	3.5	403	0.31	(79.3)	(6.4)	331	(4.3)	355	23.7	81	20	386
N.A.		–		–		–		N.A.	–	–		–		–		5	387
369.3	354	5.8	203	7.6	186	28.2	47	1.85**	117.6	36.1	4	66.2	33	22.8	91	17	388
3,499.2	87	19.9	11	27.1	7	39.3	23	0.96	57.4	27.3	10	(16.7)	399	40.7	3	19	389
130.3	415	2.3	381	3.5	366	11.6	322	3.12	17.7	7.0	208	25.5	134	19.9	136	25	390
531.8	321	5.5	219	9.3	129	15.9	224	2.01	33.1	19.1	35	59.5	36	38.3	6	21	391
564.6	313	5.9	200	10.0	102	21.8	104	1.23	56.3	14.6	81	1.3	326	28.3	38	8	392
33.0	432	(5.1)	461	(8.1)	463	(59.8)	445	(4.07)	–	–		(23.5)	414	(7.9)	371	24	393
406.4	347	5.2	235	7.2	199	14.6	258	2.35	7.3	3.7	268	(0.5)	334	15.3	227	9	394
1,021.3	229	(4.6)	460	(2.3)	452	(6.8)	428	(1.08)	(235.0)	–		(3.6)	351	10.4	303	16	395
566.9	312	3.8	309	6.8	217	15.5	238	1.67	19.3	6.1	227	106.4	10	20.3	130	8	396
598.7	306	18.0	18	25.3	8	59.1	11	N.A.	–	–		–		–		18	397
533.3	320	6.3	179	10.3	97	18.0	181	1.82	34.8	26.3	12	5.4	289	26.8	48	10	398
457.3	338	7.2	143	7.8	182	18.4	168	2.51	70.7	18.6	41	24.5	141	17.4	192	9	399
375.3	353	(12.0)	470	(22.9)	472	(101.9)	447	(1.46)	(247.5)	–		(25.[illegible])	416	–		6	400

LARGEST U.S. INDUSTRIAL

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
401	377	**INTERNATIONAL CONTROLS** Kalamazoo, Mich.	703.8¶	(7.4)	(10.8)	443	–	507.5	401	13.1	467
402	416	**AMETEK** New York	701.5¶	13.1	30.6	352	(25.7)	448.3	421	180.9	390
403	•	**STERLING CHEMICALS** Houston[6]	699.0	69.2	213.1	134	349.7	294.2	470	90.6	436
404	441	**KELLWOOD** St. Louis[16]	698.2	22.1	30.2	355	19.6	400.0	440	164.3	399
405	432	**PHILIPS INDUSTRIES** Dayton[34]	692.5	16.8	43.3	315	31.0	353.4	452	213.4	376
406	•	**LONE STAR TECHNOLOGIES** Dallas	688.1	66.8	(24.8)	451	–	3,928.4	105	313.6	319
407	•	**IMO INDUSTRIES** Lawrenceville, N.J.	687.2	86.5	28.3	360	40.5	756.0	338	294.9	329
408	431	**H.B. FULLER** St. Paul[32]	685.0	14.7	21.1	383	(18.3)	434.3	429	178.9	392
409	436	**LESLIE FAY** New York	682.7	17.3	22.3	379	12.7	363.0	450	133.8	420
410	449	**HARVARD INDUSTRIES** Farmingdale, N.J.[6]	680.1	21.7	14.0	404	(24.8)	345.0	455	80.7	443
411	427	**MEREDITH** Des Moines[4]	678.5	13.3	47.4	305	39.6	646.1	362	361.6	296
412	•	**GAYLORD CONTAINER** Deerfield, Ill.[6]	671.2	–	41.5	320	–	805.4	324	141.1	412
413	405	**STANDARD REGISTER** Dayton	669.4	1.5	38.1	329	(6.0)	443.8	422	294.3	331
414	•	**SSMC** Shelton, Conn.	668.4	–	(15.5)	444	–	N.A.		N.A.	
415	•	**VALMONT INDUSTRIES** Valley, Nebr.	662.7	49.0	15.3	398	85.3	253.4	479	79.1	446
416	411	**NERCO** Portland, Ore.	661.8	4.7	66.5‡	271	10.6	1,205.8	254	398.8	281
417	429	**OHIO MATTRESS** Tukwila, Wash.[33]	661.5	10.6	33.2	346	42.2	542.5	390	261.9	347
418	422	**HANDY & HARMAN** New York	658.1	8.3	9.7	417	26.7	466.1	415	117.6	427
419	428	**COLEMAN** Wichita, Kans.	657.9	9.9	24.5	372	27.6	435.1	427	203.3	378
420	420	**WARNACO** Los Angeles	657.3	7.9	(5.1)	436	–	653.0	360	(43.2)	475
421	443	**LONGVIEW FIBRE** Longview, Wash.[7]	657.2	15.4	96.3	224	47.8	635.5	365	353.1	302
422	424	**CALMAT** Los Angeles	655.3	8.8	56.4	293	(27.8)	764.9	332	481.6	256
423	454	**APOLLO COMPUTER** Chelmsford, Mass.	653.5	18.0	2.1**	429	(90.4)	496.7	406	226.4	369
424	478	**MEDTRONIC** Minneapolis[16]	653.3	30.1	86.5	241	17.2	640.8	364	395.9	283
425	•	**LPL INVESTMENT GROUP** Wallingford, Conn.	650.6¶	66.3	9.3	418	80.5	707.6	347	44.4	461
426	418	**BUTLER MANUFACTURING** Kansas City, Mo.	645.6	5.0	15.3	397	312.1	266.2	477	123.9	424
427	440	**XIDEX** Santa Clara, Calif.[4]	637.0	11.2	(82.1)	468	–	593.3	374	298.0	326
428	433	**TEXAS INDUSTRIES** Dallas[8]	635.3	7.9	13.1	406	941.7	662.1	357	196.6	383
429	•	**FINEVEST FOODS** Greenwich, Conn.	634.6	–	3.4	428	–	213.1	486	60.5	457
430	466	**RICELAND FOODS** Stuttgart, Ark.[18]	633.0	20.7	N.A.		–	279.7	474	143.1	411
431	484	**TRINITY INDUSTRIES** Dallas[34]	632.9	28.9	13.0	407	224.7	578.7	379	201.2	381
432	442	**SHAKLEE** San Francisco	627.5	9.7	27.2	364	15.8	434.5	428	269.0	343
433	465	**MILLIPORE** Bedford, Mass.	621.9	17.6	54.5	296	14.3	576.1	382	365.5	293
434	•	**NACCO INDUSTRIES** Cleveland	616.5	34.4	45.0	309	32.4	837.0	316	246.0	358
435	480	**GREAT LAKES CHEMICAL** West Lafayette, Ind.	616.0	23.0	103.3	215	86.0	663.8	355	482.2	255
436	437	**HUBBELL** Orange, Conn.	614.2	5.7	71.3	262	14.0	523.5	393	392.5	284
437	457	**COMMERCE CLEARING HOUSE** Riverwoods, Ill.	612.4	11.0	49.5	303	(6.3)	578.3	380	215.4	375
438	469	**TORO** Bloomington, Minn.[18]	609.2	16.9	20.0	386	17.7	268.2	476	82.0	441
439	•	**MAGMA COPPER** San Manuel, Ariz.	607.1	49.6	56.3	294	–	890.4	304	389.6	286
440	445	**UST** Greenwich, Conn.	606.7	7.5	162.1	158	23.9	598.0	372	453.3	265
441	438	**DIXIE YARNS** Chattanooga, Tenn.	606.4	4.5	21.5	381	(18.3)	343.4	456	203.9	377
442	477	**LUKENS** Coatesville, Pa.	605.3	20.4	33.4	345	54.1	353.1	453	181.3	389
443	471	**ALBERTO CULVER** Melrose Park, Ill.[6]	604.7	17.5	26.9	366	48.1	303.3	467	134.7	418
444	•	**MINISCRIBE** Longmont, Colo.	603.3	66.4	25.9	369	(17.0)	491.8	408	131.9	422
445	•	**SOUTHDOWN** Houston	600.4	–	56.7**	292	–	1,210.8	253	354.1	300
446	447	**REYNOLDS & REYNOLDS** Dayton[6]	600.1	6.6	26.1	368	23.0	398.7	441	201.9	379
447	383	**BELL & HOWELL** Skokie, Ill.	600.0[28]	–	N.A.		–	N.A.		N.A.	
448	448	**NATIONAL COOP. REFINERY** McPherson, Kans.[4]	599.8	6.8	N.A.		–	304.9	466	135.7	417
449	498	**A. SCHULMAN** Akron[24]	597.7	28.9	27.6	362	39.5	240.5	480	145.2	409
450	410	**JOSTENS** Minneapolis[4]	595.7	(6.7)	88.8	236	98.5	407.2	436	175.7	395

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS					RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY				1978-88 annual growth rate		1988		1978-88 annual average			
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	% change from 1987	%	Rank	%	Rank	%	Rank	INDUSTRY TABLE NUMBER	1988
N.A.		(1.5)	448	(2.1)	451	(82.5)	446	(2.93)	–	–		–		–		17	401
593.7	307	4.4	279	6.8	218	16.9	200	0.70	(25.5)	4.2	257	4.2	303	18.4	164	7	402
1,035.0	226	30.5	2	72.4	1	235.3	1	3.55	181.7	–		–		–		5	403
327.8	362	4.3	284	7.6	189	18.4	171	2.61	18.6	4.0	262	30.3	113	24.2	76	2	404
560.1	315	6.2	180	12.2	65	20.3	131	1.52	29.9	18.2	46	9.8	247	37.6	8	11	405
205.0	394	(3.6)	459	(0.6)	437	(7.9)	429	(1.24)	(4,233.3)	–		(9.7)	377	–		14	406
344.6	359	4.1	297	3.7	356	9.6	354	1.78	150.7	–		34.1	92	–		11	407
241.6	384	3.1	346	4.9	320	11.8	318	2.20	(18.2)	10.8	149	(24.2)	415	20.6	128	5	408
243.3	383	3.3	338	6.1	248	16.6	212	1.17	13.6	59.6	1	68.2	32	–		2	409
N.A.		2.1	387	4.1	346	17.4	187	0.80	(24.5)	–		–		–		17	410
605.2	303	7.0	154	7.3	196	13.1	295	2.48	40.1	12.0	121	3.5	313	23.6	83	20	411
194.8	396	6.2	181	5.2	299	28.8§	44	3.06	–	–		–		–		9	412
528.6	323	5.7	211	8.6	155	12.9	300	1.28	(5.9)	26.6	11	(17.3)	401	28.6	35	20	413
238.8	385	(2.3)	455	–		–		N.A.	–	–		15.8	200	–		7	414
159.0	406	2.3	376	6.0	257	19.3	150	2.75	79.2	22.6	18	129.6	5	26.4	57	7	415
543.1	318	10.0	80	5.5	279	16.7	209	1.99‡	10.6	–		5.1	291	–		16	416
828.6	269	5.0	241	6.1	249	12.7	304	1.00	30.4	20.3	26	107.3	9	36.5	10	10	417
280.3	378	1.5	406	2.1	395	8.2	365	0.70	27.3	(3.1)	322	14.0	215	11.5	290	15	418
485.1	332	3.7	313	5.6	276	12.0	314	3.47	27.6	3.5	273	31.4	108	15.5	223	11	419
N.A.		(0.8)	439	(0.8)	441	–		(5.19)	–	–		–		–		2	420
744.5	277	14.7	32	15.2	38	27.3	54	8.71	48.4	16.6	55	56.4	42	16.6	206	9	421
830.8	267	8.6	114	7.4	193	11.7	320	1.82	(28.1)	1.7	288	7.6	272	14.0	251	4	422
289.0	377	0.3	428	0.4	427	0.9	417	0.06**	(90.0)	–		(30.0)	420	–		6	423
1,084.8	219	13.2	40	13.5	51	21.9	103	6.32	20.4	18.6	39	(15.7)	397	19.0	154	22	424
80.8	429	1.4	409	1.3	416	20.9	118	1.34	116.1	–		11.8	238	–		7	425
170.6	401	2.4	372	5.8	270	12.4	310	3.41	342.9	(1.7)	313	5.0	293	5.9	345	14	426
N.A.		(12.9)	471	(13.8)	467	(27.5)	441	N.A.	–	–		–		–		6	427
302.9	372	2.1	389	2.0	400	6.6	376	1.09	–	(4.2)	326	16.0	198	12.1	279	15	428
98.0	425	0.5	422	1.6	410	5.6	390	0.36	(50.0)	–		–		–		8	429
N.A.		–		–		–		N.A.	–	–		–		–		8	430
602.6	305	2.1	388	2.3	393	6.5	379	0.74	196.0	(2.5)	321	33.0	96	24.7	72	27	431
502.0	330	4.3	282	6.3	239	10.1	344	2.05	15.8	2.8	278	56.1	43	18.7	161	19	432
878.6	261	8.8	110	9.5	119	14.9	251	1.96	15.3	10.7	151	(6.4)	366	10.3	304	21	433
313.8	368	7.3	141	5.4	285	18.3	175	5.08	35.5	18.5	42	35.1	85	19.3	145	11	434
1,158.1	209	16.8	21	15.6	34	21.4	111	5.93	83.0	20.0	30	9.2	253	19.0	153	5	435
944.0	247	11.6	57	13.6	50	18.1§	178	2.61	14.7	12.1	118	9.3	252	23.8	80	7	436
925.4	250	8.1	125	8.6	157	23.0	87	2.75	(6.1)	14.5	83	(20.9)	410	19.8	137	20	437
196.0	395	3.3	337	7.5	191	23.0§	86	1.84	21.1	3.0	276	29.5	116	6.2	342	11	438
205.6	393	9.3	98	6.3	237	14.5	262	1.50	–	–		–		–		15	439
2,468.8	118	26.7	3	27.1	6	35.8	25	1.41	25.3	18.3	43	58.8	39	29.1	33	25	440
235.8	388	3.5	323	6.3	240	10.5	337	1.80	(25.6)	10.0	161	18.4	183	–		24	441
251.4	381	5.5	217	9.5	120	18.4	169	3.91	51.6	9.0	179	(14.0)	391	14.4	241	15	442
417.5	346	4.4	273	8.9	142	20.0	134	1.99	55.5	23.7	17	78.8	20	34.1	15	23	443
100.6	424	4.3	290	5.3	290	19.6	146	0.65	(20.7)	–		(18.4)	403	–		6	444
323.9	363	9.4	93	4.7	327	(174.6)	452	3.72**	15.2	9.9	165	17.7	186	14.1	247	4	445
297.9	373	4.3	280	6.5	227	12.9	302	2.43	27.2	6.6	217	50.5	52	9.6	314	20	446
N.A.		–		–		–		N.A.	–	–		–		–		22	447
N.A.		–		–		–		N.A.	–	–		–		–		18	448
395.1	349	4.6	261	11.5	73	19.0	155	3.09	39.8	19.0	37	16.4	193	34.0	16	5	449
688.7	285	14.9	30	21.8	9	50.5	12	2.48	103.3	19.1	34	6.9	275	21.5	109	12	450

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LARGEST U.S. INDUSTRIAL

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RANK 1988	RANK 1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
451	417	**WESTMORELAND COAL** Philadelphia	593.5	(3.8)	1.5	433	–	386.4	445	139.3	415
452	425	**THORN APPLE VALLEY** Southfield, Mich.[8]	593.2	(1.4)	5.4**	425	414.8	103.0	489	33.9	464
453	467	**FABERGE** New York[29]	593.0	13.1	1.6	432	(94.0)	1,159.0	257	107.4	429
454	•	**AVONDALE INDUSTRIES** Avondale, La.	592.4	(13.5)	4.4	426	(3.3)	419.3	435	222.4	373
455	346	**FAIRCHILD INDUSTRIES** Chantilly, Va.	591.9	(34.0)	27.0**	365	16.9	441.1	425	79.2	445
456	455	**OXFORD INDUSTRIES** Atlanta[6]	590.6	6.7	(9.8)	442	(191.9)	223.0	484	103.7	430
457	461	**GUILFORD MILLS** Greensboro, N.C.[4]	578.3	7.3	26.7	367	11.7	379.3	446	191.7	386
458	481	**ALLIED PRODUCTS** Chicago	577.5	16.2	5.5	424	–	476.6	413	135.8	416
459	453	**HON INDUSTRIES** Muscatine, Iowa	575.3	3.6	35.3	341	42.5	275.9	475	147.5	406
460	285	**MAXUS ENERGY** Dallas	574.9	(52.8)	(131.6)	470	–	1,719.8	208	25.4	466
461	•	**P.H. GLATFELTER** Spring Grove, Pa.	569.3	–	82.2	248	–	663.0	356	335.8	310
462	460	**CARLISLE** Cincinnati	567.4	4.5	17.4	394	(7.5)	325.4	459	191.0	387
463	472	**PHILLIPS-VAN HEUSEN** New York[29]	567.2	10.3	30.0	356	49.3	317.8	464	95.3	435
464	•	**CONSTAR INTERNATIONAL** Chattanooga	565.7	24.4	14.1	403	45.6	230.0	481	81.3	442
465	462	**TAMBRANDS** Lake Success, N.Y.	563.3	4.5	85.3	245	11.3	465.3	416	352.9	303
466	434	**MITCHELL ENERGY** The Woodlands, Tex.[29]	561.9	(4.4)	8.8	420	3.9	2,112.1	178	561.9	235
467	464	**JEPSON** Elmhurst, Ill.	560.1	5.7	12.8	408	(29.8)	301.9	468	73.9	451
468	•	**UIS** New York	560.0	8.4	35.5	339	63.7	324.9	460	245.5	359
469	490	**CARPENTER TECHNOLOGY** Reading, Pa.[4]	555.5	15.6	24.3	373	441.7	635.0	366	307.3	323
470	•	**DIBRELL BROTHERS** Danville, Va.[4]	555.0	80.1	12.7	409	–	290.1	472	63.8	453
471	468	**SUN-DIAMOND GROWERS** Pleasanton, Calif.[18]	553.8	5.8	N.A.		–	282.3	473	98.8	432
472	•	**BORDEN CHEMICALS & PLASTICS** Geismar, La.	553.0	–	121.0	194	–	604.8	370	363.3	294
473	•	**BANNER INDUSTRIES** Beachwood, Ohio[4]	547.6¶	48.2	(7.0)	440	(169.0)	1,065.9	278	86.9	437
474	474	**AMERICAN MAIZE-PRODUCTS** Stamford, Conn.	547.5	8.0	1.4	434	(88.7)	420.1	434	151.3	405
475	•	**J.P. INDUSTRIES** Ann Arbor, Mich.	547.4¶	41.6	14.8	400	0.2	464.1	418	121.5	426
476	476	**FOXBORO** Foxboro, Mass.	539.9	7.0	9.8	416	–	472.2	414	195.2	384
477	486	**AFFILIATED PUBLICATIONS** Boston	534.2	9.0	(80.9)	467	(140.2)	425.4	432	194.4	385
478	•	**SUDBURY** Cleveland[8]	531.7	54.6	11.3	412	0.5	387.3	444	79.3	444
479	426	**AVERY** New York[6]	531.7¶	(11.4)	(58.6)	461	–	406.6	437	7.8	469
480	491	**RUSSELL** Alexander City, Ala.	531.1	10.7	53.8	297	16.0	561.0	385	345.1	306
481	492	**KIMBALL INTERNATIONAL** Jasper, Ind.[4]	529.8	11.1	35.6	338	19.3	320.4	462	224.7	372
482	•	**GEORGE BANTA** Menasha, Wis.	526.8	74.2	23.1	378	35.3	370.3	449	166.1	398
483	470	**BIG THREE INDUSTRIES** Houston[50]	525.0[28]	1.3	N.A.		–	N.A.		N.A.	
484	487	**NOXELL** Hunt Valley, Md.	521.6	6.6	51.0	301	17.1	330.0	458	246.8	357
485	•	**MAXXAM** Los Angeles[51]	519.2	–	17.5	393	–	3,635.0	111	103.0	431
486	348	**MINSTAR** Minneapolis	518.2	(40.9)	14.6	401	–	374.0	447	(184.0)	478
487	495	**SPRAGUE TECHNOLOGIES** Stamford, Conn.	517.3	10.1	13.2	405	266.7	501.1	403	329.0	313
488	•	**POPE & TALBOT** Portland, Ore.	515.0	20.6	31.9	349	13.6	319.4	463	162.2	400
489	•	**THOMAS & BETTS** Bridgewater, N.J.	514.6	17.9	58.6	289	20.9	492.9	407	314.8	317
490	•	**PRAIRIE FARMS DAIRY** Carlinville, Ill.[6]	512.0	8.3	N.A.		–	134.1	487	83.1	440
491	•	**DR PEPPER/SEVEN-UP** Dallas	510.3[28]	–	N.A.		–	736.1	341	N.A.	
492	482	**SCIENTIFIC-ATLANTA** Atlanta[4]	508.6	2.7	29.7	358	22.3	316.3	465	237.3	363
493	497	**STANDARD PRODUCTS** Cleveland[4]	508.3	9.3	34.1	342	8.0	255.2	478	145.8	408
494	451	**H.H. ROBERTSON** Pittsburgh	508.0¶	(8.7)	(28.3)	455	(1,218.3)	296.1	469	78.9	447
495	479	**GROW GROUP** New York[4]	506.8¶	1.0	.0	435	(97.3)	223.3	483	61.2	456
496	•	**PILGRIM'S PRIDE** Pittsburg, Tex.[6]	506.4	20.1	1.7	430	(83.5)	291.2	471	68.2	452
497	•	**MOLEX** Lisle, Ill.[4]	502.4	29.9	59.3	287	36.5	499.0	405	389.7	285
498	489	**CAMERON IRON WORKS** Houston[4]	501.6	3.4	(5.4)	437	–	757.4	334	340.0	309
499	•	**NCH** Irving, Tex.[16]	500.8	17.4	30.0	357	53.1	343.0	457	180.3	391
500	•	**CHEMED** Cincinnati	500.6	28.0	24.1**	374	18.5	322.7	461	111.2	428
		TOTALS	2,023,135.0		114,960.1			2,078,811.6		697,999.9	

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				RANK	
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	%	Rank	%	Rank		1988
129.9	416	0.3	432	0.4	429	1.1	415	0.18	–	(1.0)	309	(17.6)	402	(3.9)	367	16	451
N.A.		0.9	418	5.2	298	15.8§	230	1.50**	417.2	19.0	36	–		–		8	452
N.A.		0.3	429	0.1	432	(0.1)	422	N.A.	–	–		–		–		23	453
248.4	382	0.7	420	1.0	421	2.0	413	0.22	–	–		–		–		27	454
188.8	397	4.6	268	6.1	251	24.7§	64	1.37**	63.1	(3.9)	325	80.7	18	7.2	332	7	455
115.5	421	(1.7)	451	(4.4)	458	(9.4)	433	(0.93)	(197.9)	–		0.1	331	21.0	120	2	456
308.8	370	4.6	264	7.0	208	13.9	277	2.63	16.4	10.8	148	(2.9)	347	27.1	47	24	457
85.2	428	0.9	417	1.1	420	2.7§	409	0.74	–	11.0	144	21.0	166	9.3	316	11	458
366.2	355	6.1	186	12.8	57	23.9	74	1.89	52.4	10.2	158	(5.5)	361	13.6	257	10	459
673.8	289	(22.9)	474	(7.7)	455	(633.5)	455	(1.99)	–	–		(1.1)	338	(1.3)	364	16	460
[illegible]81.4	239	14.4	35	12.4	64	24.5	66	3.40	51.1	18.3	45	26.5	124	29.9	28	9	461
292.9	376	3.1	348	5.3	287	9.1	358	2.16	(4.0)	3.8	266	25.2	137	23.3	86	21	462
158.4	407	5.3	226	9.4	121	31.5	34	1.97	54.9	–		44.7	63	21.5	108	2	463
133.5	414	2.5	368	6.1	253	17.3	191	2.25	54.1	6.4	219	25.8	131	17.4	193	21	464
1,359.7	192	15.1	29	18.3	20	24.2	70	3.83	11.0	9.9	164	12.9	230	21.4	113	9	465
666.8	291	1.6	402	0.4	428	1.6	414	0.19	5.6	(12.1)	343	13.3	222	11.3	294	16	466
188.2	398	2.3	377	4.3	340	17.4	189	0.68	(32.7)	–		75.6	23	–		11	467
N.A.		6.3	173	10.9	81	14.5	260	N.A.	–	–		–		–		17	468
451.8	340	4.4	278	3.8	354	7.9	367	2.67	434.0	(3.9)	324	12.0	235	11.4	291	15	469
128.9	417	2.3	378	4.4	338	19.9	135	3.78	–	16.1	58	48.3	57	30.6	24	25	470
N.A.		–		–		–		N.A.	–	–		–		–		8	471
N.A.		21.9	6	20.0	13	33.3	29	N.A.	–	–		–		–		5	472
143.2	413	(1.3)	446	(0.7)	438	(8.1)	430	(1.52)	(212.9)	–		69.4	29	10.0	309	14	473
107.0	422	0.3	430	0.3	430	0.9	416	0.22	(89.5)	(16.3)	345	28.8	120	12.6	271	8	474
167.4	404	2.7	361	3.2	378	12.2	311	1.35	2.3	–		(2.7)	344	–		11	475
380.2	352	1.8	395	2.1	396	5.0	395	0.80	–	(11.2)	342	34.5	88	6.0	344	22	476
2,979.0	102	(15.1)	472	(19.0)	471	(41.6)	444	(1.17)	(140.8)	–		32.9	97	47.0	2	20	477
86.5	427	2.1	385	2.9	385	14.3	266	0.86	(31.7)	–		(28.6)	419	–		17	478
N.A.		(11.0)	468	(14.4)	468	(754.2)	456	(4.94)	–	–		–		–		5	479
827.7	270	10.1	78	9.6	114	15.6	232	1.36	16.2	13.7	94	32.2	99	26.1	61	24	480
357.8	358	6.7	162	11.1	78	15.9	228	1.68	19.6	10.4	153	(11.2)	382	18.4	163	10	481
294.7	374	4.4	277	6.2	241	13.9	278	1.46	–	12.7	107	70.3	27	30.7	23	20	482
N.A.		–		–		–		N.A.	–	–		–		–		5	483
829.0	268	9.8	85	15.5	35	20.7	121	1.26	16.7	17.2	50	(7.4)	368	28.6	34	23	484
236.8	386	3.4	330	0.5	426	17.0	197	1.95	875.0	10.0	160	204.7	2	17.5	189	15	485
N.A.		2.8	358	3.9	351	–		1.76	–	7.7	198	–		–		27	486
222.6	392	2.6	365	2.6	389	4.0	401	0.72	300.0	–		26.0	127	–		7	487
232.9	390	6.2	184	10.0	101	19.7	139	2.68	15.0	18.6	40	2.8	318	15.7	221	9	488
817.8	272	11.4	60	11.9	68	18.6	164	3.46	20.1	7.7	197	(6.1)	364	12.4	273	7	489
N.A.		–		–		–		N.A.	–	–		–		–		8	490
N.A.		–		–		–		N.A.	–	–		–		–		3	491
357.8	357	5.8	204	9.4	125	12.5	309	1.25	20.2	13.7	95	17.7	187	10.1	308	7	492
305.6	371	6.7	163	13.3	53	23.4	80	3.14	13.4	25.0	14	36.7	79	31.8	20	21	493
65.6	431	(5.6)	463	(9.6)	465	(35.9)	442	(4.58)	(1,305.3)	–		(41.8)	425	(0.4)	362	14	494
143.9	412	0.0	435	0.0	435	0.1	421	(0.07)	(275.0)	–		83.5	16	16.2	213	5	495
155.3	408	0.3	426	0.6	425	2.5	410	0.08	(82.6)	–		51.6	48	–		8	496
866.4	263	11.8	55	11.9	69	15.2	244	2.34	36.0	20.3	27	5.5	287	20.7	126	7	497
602.8	304	(1.1)	442	(0.7)	439	(1.6)	423	(0.35)	–	–		36.6	80	2.6	353	11	498
392.2	351	6.0	191	8.7	148	16.6	211	3.29	55.2	6.8	212	8.3	263	15.2	228	5	499
310.7	369	4.8	254	7.5	192	21.7	107	2.60**	14.0	2.8	279	3.0	315	12.6	270	5	500
1,290,872.6																	

DEFINITIONS AND EXPLANATIONS

SALES

All companies on the list must have derived more than 50% of their sales from manufacturing and/or mining. Sales exclude nonoperating revenues but include sales of subsidiaries if they are consolidated. Sales from discontinued operations are included if these figures are published. If the sales are at least 10% higher for this reason, there is a symbol (¶) next to the sales figure. All figures are for the year ended December 31, 1988, unless otherwise noted. Sales figures do not include excise taxes collected by manufacturers, and so the figures for some corporations—most of which sell gasoline, liquor, or tobacco—may be lower than those published by the corporations themselves. If they are at least 5% lower for this reason, there is an asterisk (*) next to the sales figures.

PROFITS

Profits are shown after taxes and after extraordinary credits or charges if any are shown on the income statement. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profits shown, a double dagger (‡) an extraordinary charge of at least 10%. Figures in parentheses indicate a loss. Profit declines over 100% reflect swings from 1987 profits to 1988 losses. Cooperatives provide only "net margin" figures, which are not comparable with the profits figures in these listings, and therefore N.A. is shown in that column.

ASSETS

Assets shown are those at the company's fiscal year-end.

STOCKHOLDERS' EQUITY

Stockholders' equity is the sum of capital stock, surplus, and retained earnings at the company's year-end. Redeemable preferred stock is excluded if its redemption is either mandatory or outside the control of the company, except in the case of cooperatives. For purposes of calculating "profits as percent of stockholders' equity," any dividends paid on redeemable preferred stock, if that stock's redemption is either mandatory or outside the control of the company, have been subtracted from the profit figure.

MARKET VALUE

The figure shown was arrived at by multiplying the number of common shares outstanding (at the latest date available) by the price per common share as of March 10, 1989.

EARNINGS PER SHARE

For all companies the figures shown are the primary earnings per share that appear on the company's income statement. Per share earnings for 1987 and 1978 are adjusted for stock splits and stock dividends. They are not restated for mergers, acquisitions, or accounting changes made after 1978. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profit shown, a double dagger (‡) an extraordinary charge of at least 10%. Results are listed as not available (N.A.) if the companies are cooperatives, joint ventures, or wholly owned subsidiaries of other companies, or if the figures were not published in 1978. The growth rate is the average annual growth, compounded.

TOTAL RETURN TO INVESTORS

Total return to investors includes both price appreciation and dividend yield to an investor in the company's stock. The figures shown assume sales at the end of 1988 of stock owned at the end of 1978 and 1987. It has been assumed that any proceeds from cash dividends, the sale of rights and warrant offerings, and stock received in spinoffs were reinvested when they were paid. Returns are adjusted for stock splits, stock dividends, recapitalizations, and corporate reorganizations as they occur; however, no effort has been made to reflect the cost of brokerage commissions or of taxes. Results are listed as not available (N.A.) if shares are not publicly traded or are traded on only a limited basis. If companies have more than one class of shares outstanding, only the more widely held and actively traded has been considered. Total return percentages shown are the returns received by the hypothetical investor described above. The ten-year figures are annual averages, compounded.

INDUSTRY TABLES

Industry table numbers used in the directory indicate the groups in which companies are placed in "The 500 by Industry, Ranked by 11 Measures," beginning on page 380. Companies are included in the industry that represents the greatest volume of their industrial sales. Industry groups are based on categories established by the U.S. Office of Management and Budget and issued by the Federal Statistical Policy and Standards Office. The median figures in the tables refer only to results of companies in the 500; no attempt has been made to calculate medians in groups with fewer than four companies.

Most of the figures in this FORTUNE 500 Directory were prepared by Reed Abelson and Rahul Jacob, who are responsible for the columns reporting on companies' sales, assets, profits, and stockholders' equity, and the industry table numbers. Figures on market value, earnings per share, and total return to investors were prepared by Claudine Knight and Kathleen Smyth.

FOOTNOTES TO THE 500

● Indicates that a company was not among the 500 in 1987.
* Does not include excise taxes; see the explanation of "sales" above.
** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" above.
N.A. Not available.
‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" above.
¶ Includes sales from discontinued operations of at least 10%; see the explanation of "sales" above.

1

[1] Figures include Roper (1987 rank: 389), acquired April 22, 1988.
[2] Figures include Kraft (1987 rank: 31), acquired December 7, 1988.
[3] Owned by Royal Dutch/Shell Group (1987 International 500 rank: 1).
[4] Figures are for fiscal year ended June 30, 1988.
[5] Figures include Sterling Drug (1987 rank: 174), acquired February 23, 1988.
[6] Figures are for fiscal year ended September 30, 1988.
[7] Figures are for fiscal year ended October 31, 1988.
[8] Figures are for fiscal year ended May 31, 1988.
[9] Figures are for fiscal year ended February 29, 1988.

10

[10] Owned by Unilever (1987 International 500 rank: 11).
[11] Name changed from Baxter Travenol Laboratories May 17, 1988.
[12] Owned by Hanson Trust (1987 International 500 rank: 62).
[13] Acquired by Grand Metropolitan (1987 International 500 rank: 75) January 3, 1989.
[14] Owned by Hoechst (1987 International 500 rank: 22).
[15] Owned by Philips' Gloeilampenfabrieken (1987 International 500 rank: 12).
[16] Figures are for fiscal year ended April 30, 1988.
[17] Owned by BASF (1987 International 500 rank: 17).
[18] Figures are for fiscal year ended July 31, 1988.
[19] Owned by Bayer (1987 International 500 rank: 21).

20

[20] Acquired by Pechiney (1987 International 500 rank: 99) January 12, 1989.
[21] Name changed from IC Industries December 1, 1988.
[22] Figures include Brockway (1987 rank: 306), acquired April 12, 1988.
[23] Name changed from Swift Independent October 25, 1988.
[24] Figures are for fiscal year ended August 31, 1988.
[25] Owned by Petrofina (1987 International 500 rank: 64).
[26] Owned by National Intergroup (1987 Service 500 rank: S6).
[27] Name changed from Jim Walter, January 7, 1988.
[28] FORTUNE estimate.
[29] Figures are for fiscal year ended January 31, 1988.

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[30] Owned by Seagram (1987 International 500 rank: 288).
[31] Figures include J.P. Stevens (1987 rank: 220), acquired May 7, 1988.
[32] Figures include Georgia Kraft (1987 rank: 473), acquired January 4, 1988.
[33] Figures are for fiscal year ended November 30, 1988.
[34] Figures are for fiscal year ended March 31, 1988.
[35] Owned by McDermott International (1987 International 500 rank: 202).
[36] Owned by Montedison (International 500 rank: 48).
[37] Figures include Computervision (1987 rank: 446), acquired February 5, 1988.
[38] Acquired by Maytag (rank: 216) January 26, 1989.
[39] Owned by Loews (1987 Service 500 rank: F15).

40

[40] Owned by Esselte (1987 International 500 rank: 333).
[41] Owned by Lafarge Coppée (1987 International 500 rank: 211).
[42] Owned by Saint-Gobain (1987 International 500 rank: 37).
[43] Owned by Jefferson Smurfit Group (1987 International 500 rank: 437).
[44] Name changed from York International December 19, 1988.
[45] Name changed from Deluxe Check Printers May 18, 1988.
[46] Acquired by Maxwell Communication (1987 International 500 rank: 436) December 16, 1988.
[47] Name changed from Telex June 28, 1988.
[48] Name changed from Sealed Power April 27, 1988.
[49] Name changed from Interstate Bakeries April 29, 1988, after merger.

50

[50] Owned by L'Air Liquide (1987 International 500 rank: 173).
[51] Figures include Kaisertech (1987 rank: 176), acquired October 28, 1988.

ARRIVALS AND DEPARTURES

NEWCOMERS TO THE 500

	SALES RANK
AVONDALE INDUSTRIES	454
BANNER INDUSTRIES	473
BANTA (GEO.)	482
BORDEN CHEMICALS & PLASTICS	472
BURLINGTON RESOURCES	194
CHEMED	500
DIAMOND SHAMROCK R&M	224
DIBRELL BROTHERS	470
DR PEPPER/SEVEN-UP	491
FINEVEST FOODS	429
GAYLORD CONTAINER	412
GLATFELTER (P.H.)	461
HENLEY GROUP	148
IMO INDUSTRIES	407
J.P. INDUSTRIES	475
LONE STAR TECHNOLOGIES	406
LPL INVESTMENT GROUP	425
MAGMA COPPER	439
MAXXAM	485
MINISCRIBE	444
MOLEX	497
NCH	499
PILGRIM'S PRIDE	496
POPE & TALBOT	488
PRAIRIE FARMS DAIRY	490
REXENE	397
SCRIPPS (E.W.)	293
SSMC	414
STANDARD COMMERCIAL	390
STERLING CHEMICALS	403
SUDBURY	478
THOMAS & BETTS	489
UIS	468
UNILEVER U.S.	63
VALHI	188
VALMONT INDUSTRIES	415

RETURNED TO THE 500

BERKSHIRE HATHAWAY (1958: 499)	205
CONSTAR INTERNATIONAL (1986: 491)	464
LORILLARD (1968: 255)	263
MCDERMOTT (1982: 108)	206
NACCO INDUSTRIES (1986: 461)	434
NATIONAL STEEL (1982: 127)	165
SHELLER-GLOBE (1986: 465)	368
SOUTHDOWN (1974: 486)	445
WARNER COMMUNICATIONS (1983: 114)	109

DISPLACED FROM THE 500

	1987 SALES RANK
AFG INDUSTRIES [1]	488
ALLIS-CHALMERS	394
AMERICAN TEL. & TEL. [2]	8
BAIRNCO	412
BASSETT FURNITURE INDUSTRIES	494
BP AMERICA [1]	22
BROCKWAY [3]	306
CALIFORNIA & HAWAIIAN SUGAR [1]	435
CHESEBROUGH-POND'S [4]	304
CLEVELAND-CLIFFS	496
COLECO INDUSTRIES	475
COMPUTERVISION [5]	446
ECOLAB [2]	331
ENVIRODYNE INDUSTRIES	493
FIRESTONE TIRE & RUBBER [6]	112
FISHER SCIENTIFIC GROUP [7]	345
FOSTER WHEELER [2]	284
GENERAL CINEMA [2]	313
GEORGIA KRAFT [8]	473
GOULD [9]	278
HARCOURT BRACE JOVANOVICH [2]	268
HARTE-HANKS COMMUNICATIONS	452
HENLEY MANUFACTURING [7]	423
HOMESTAKE MINING	485
HOUSEHOLD MANUFACTURING [1]	321
ITT [2]	45
JOY TECHNOLOGIES	403
KAISERTECH [10]	176
KNOLL INTERNATIONAL [1]	191
KOPPERS [11]	224
KRAFT [12]	31
LEVER BROTHERS [4]	145
LIPTON (THOMAS J.) [4]	243
LIQUID AIR [1]	444
LONE STAR INDUSTRIES	376
M/A-COM	459
NATIONAL STARCH & CHEMICAL [4]	287
NEWMONT MINING	450
NL INDUSTRIES [13]	253
PULLMAN [1]	413
ROPER [14]	389
SINGER	202
STANADYNE [1]	458
STERLING DRUG [15]	174
STEVENS (J.P.) [16]	220

* Figures in parentheses indicate year and sales rank the last time the company was listed.

[1] Figures no longer made public.

[2] No longer classified as industrial.

[3] Acquired by Owens-Illinois (rank: 129) April 12, 1988.

[4] Consolidated into Unilever U.S.

[5] Acquired by Prime Computer (rank: 241) February 5, 1988.

[6] Acquired by Bridgestone (1987 International 500 rank: 120) May 5, 1988.

[7] Consolidated into Henley Group.

[8] Acquired by Temple-Inland (rank: 200) January 4, 1988.

[9] Acquired by Nippon Mining (1987 International 500 rank: 162) November 1, 1988.

[10] Acquired by MAXXAM (rank: 485) October 28, 1988.

[11] Acquired by Beazer PLC of Bath, England, June 15, 1988.

[12] Acquired by Philip Morris (rank: 10) December 7, 1988.

[13] Acquired by Valhi (rank: 188) August 8, 1986.

[14] Acquired by General Electric (rank: 5) April 22, 1988.

[15] Acquired by Eastman Kodak (rank: 18) February 23, 1988.

[16] Acquired by West Point–Pepperell (rank: 195) May 7, 1988.

THE MONEY LOSERS

	SALES RANK	LOSS
LTV	56	$3,153,600,000
MANVILLE	190	1,314,300,000
EAGLE-PICHER INDUSTRIES	379	465,800,000
HONEYWELL	60	434,900,000
AVON PRODUCTS	132	404,500,000
COMBUSTION ENGINEERING	131	245,200,000
COOPER COS.	349	207,400,000
MAXUS ENERGY	460	131,600,000*
ATARI	400	84,800,000
XIDEX	427	82,100,000*
AFFILIATED PUBLICATIONS	477	80,900,000
NATIONAL GYPSUM	292	79,600,000*
SUNDSTRAND	251	76,600,000
YORK HOLDINGS	290	72,700,000
CUMMINS ENGINE	135	63,400,000
OWENS-ILLINOIS	129	59,000,000
AVERY	479	58,600,000*
FRUEHAUF	196	56,500,000*
TRIANGLE INDUSTRIES	111	54,300,000
HENLEY GROUP	148	47,000,000
UNITED MER. & MFRS.	393	37,000,000*
LOUISIANA LAND & EXPL.	395	33,300,000
H.H. ROBERTSON	494	28,300,000
IBC HOLDINGS	365	27,300,000
AMERICAN STANDARD	123	26,300,000
ALLEGHENY INT'L	341	25,100,000*
LONE STAR TECHNOLOGIES	406	24,800,000*
BURLINGTON HOLDINGS	174	23,800,000
POLAROID	218	22,600,000
AM INTERNATIONAL	280	20,400,000
MOHASCO	373	18,100,000
TEKTRONIX	261	16,700,000
DATA GENERAL	272	15,500,000*
SSMC	414	15,500,000
INT'L CONTROLS	401	10,800,000
OXFORD INDUSTRIES	456	9,800,000
ANCHOR GLASS CONTAINER	340	8,500,000
BANNER INDUSTRIES	473	7,000,000
MEMOREX TELEX	358	6,500,000
AMSTAR	325	5,700,000
CAMERON IRON WORKS	498	5,400,000*
WARNACO	420	5,100,000*

*Also lost money in 1987.

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																						
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
										SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
1	**AEROSPACE** 17 COMPANIES																							
	UNITED TECHNOLOGIES 16	18,088	1	5	10	659	2	11	9	4	7	5	8	14	7	6	8	12	13	26	4	186,800	1	(2)
	BOEING 19	16,962	2	10	6	614	4	28	4	4	8	5	9	11	8	6	9	15	6	68	2	147,300	2	8
	MCDONNELL DOUGLAS 25	15,072	3	15	4	350	8	12	8	2	15	3	15	11	9	8	5	12	16	31	3	121,421	3	8
	ROCKWELL INT'L 28	11,946	4	(1)	14	812	1	28	5	7	1	9	4	22	3	17	2	22	1	19	9	112,200	4	(3)
	ALLIED-SIGNAL 29	11,909	5	3	11	463	5	(29)	14	4	6	5	10	14	5	1	12	12	15	21	7	109,550	5	(5)
	LOCKHEED 33	10,667	6	(6)	16	624	3	48	3	6	3	9	2	25	2	22	1	22	2	25	5	86,800	7	(13)
	GENERAL DYNAMICS 41	9,551	7	2	12	379	6	(13)	13	4	5	6	5	20	4	–		15	8	6	13	102,800	6	(2)
	TEXTRON 61	7,111	8	26	3	234	9	(9)	12	3	13	2	16	10	12	2	11	12	14	9	12	60,000	9	(2)
	NORTHROP 75	5,797	9	(4)	15	104	10	11	10	2	16	3	14	10	11	1	13	13	12	13	11	44,600	10	(7)
	MARTIN MARIETTA 77	5,727	10	11	5	359	7	56	2	6	2	11	1	30	1	15	3	21	4	(1)	15	67,500	8	(4)
	GRUMMAN 126	3,591	11	8	9	86	12	143	1	2	14	3	13	10	10	7	7	15	7	20	8	32,000	11	(5)
	GENCORP 204	2,049	12	(34)	17	70	13	(85)	15	3	11	6	7	–		4	10	14	9	(22)	16	15,600	13	11
	SEQUA 210	1,948	13	44	1	69	14	–		4	10	4	12	10	13	8	6	15	5	15	10	16,100	12	–
	COLT INDUSTRIES 234	1,656	14	1	13	91	11	21	6	5	4	9	3	–		–		–		–		15,200	14	(8)
	SUNDSTRAND 251	1,477	15	8	8	(77)	17	(321)	16	(5)	17	(5)	17	(13)	15	–		13	11	22	6	14,381	15	1
	ROHR INDUSTRIES 353	907	16	37	2	32	15	21	7	4	9	4	11	9	14	(2)	14	13	10	73	1	11,000	16	7
	KAMAN 381	767	17	9	7	25	16	5	11	3	12	6	6	14	6	13	4	21	3	3	14	6,391	17	(1)
	TOTAL	125,226				4,896																1,149,643		
	MEDIAN	5,797		8		234		12		4		5		11		7		14		19		60,000		(2)
2	**APPAREL** 9 COMPANIES																							
	VF 170	2,516	1	(2)	9	174	1	(3)	4	7	2	10	2	16	6	21	2	35	1	21	5	43,000	1	(12)
	CLAIBORNE (LIZ) 299	1,184	2	12	3	110	2	(4)	5	9	1	18	1	24	3	–		–		6	7	4,700	8	24
	HARTMARX 304	1,174	3	9	5	33	4	(8)	6	3	7	5	6	11	7	8	3	23	3	8	6	22,500	3	2
	FRUIT OF THE LOOM 333	1,005	4	(1)	8	68	3	–		7	3	4	7	26	2	–		–		28	4	23,400	2	19
	KELLWOOD 404	698	5	22	1	30	5	20	2	4	5	8	4	18	4	4	4	24	2	30	3	14,200	4	1
	LESLIE FAY 409	683	6	17	2	22	7	13	3	3	6	6	5	17	5	60	1	–		68	1	3,500	9	(30)
	WARNACO 420	657	7	8	6	(5)	8	–		(1)	8	(1)	8	–		–		–		–		11,663	6	(0)
	OXFORD INDUSTRIES 456	591	8	7	7	(10)	9	(192)	7	(2)	9	(4)	9	(9)	8	–		21	5	0	8	11,733	5	(3)
	PHILLIPS-VAN HEUSEN 463	567	9	10	4	30	6	49	1	5	4	9	3	32	1	–		22	4	45	2	8,000	7	–
	TOTAL	9,075				457																142,696		
	MEDIAN	698		9		30		(3)		4		6		18		14		23		24		11,733		1
3	**BEVERAGES** 8 COMPANIES																							
	PEPSICO 26	13,007	1	13	2	762	2	28	2	6	5	7	4	24	2	14	3	21	3	21	4	235,000	1	4
	ANHEUSER-BUSCH 46	8,924	2	8	6	716	3	16	4	8	4	10	3	23	3	20	1	26	1	(4)	6	41,118	2	(1)
	COCA-COLA 49	8,338	3	9	4	1,045	1	14	6	13	2	14	1	31	1	11	4	18	4	23	2	18,774	4	10
	COCA-COLA ENTERPRISES 121	3,874	4	16	1	153	5	73	1	4	6	3	6	8	6	–		–		6	5	22,000	3	2
	SEAGRAM (JOS. E.) 191	2,199	5	8	5	418	4	24	3	19	1	6	5	10	5	–		–		–		10,200	6	(4)
	COORS (ADOLPH) 249	1,522	6	13	3	47	7	(3)	7	3	7	3	7	4	7	(2)	5	7	5	22	3	10,500	5	6
	BROWN-FORMAN 320	1,067	7	(3)	7	103	6	15	5	10	3	11	2	23	4	15	2	21	2	69	1	5,600	7	(15)
	DR PEPPER/SEVEN-UP 491	510	8	–		–		–		–		–		–		–		–		–		842	8	–
	TOTAL	39,441				3,244																344,034		
	MEDIAN	3,037		9		418		16		8		7		23		14		21		21		14,637		2
4	**BUILDING MATERIALS** 15 COMPANIES																							
	AMERICAN STANDARD 123	3,716	1	8	6	(26)	11	(121)	8	(1)	10	(1)	10	(19)	8	–		–		–		34,100	2	(13)
	OWENS-ILLINOIS 129	3,572	2	(4)	12	(59)	12	–		(2)	12	(1)	12	(103)	9	–		–		–		46,500	1	–
	OWENS-CORNING FIBER. 151	2,831	3	(2)	11	189	2	(6)	4	7	6	12	1	–		0	7	23	1	36	4	17,600	5	(6)
	USG 152	2,811	4	(8)	13	125	3	(39)	7	4	8	7	6	–		4	4	10	6	(63)	10	15,300	7	(31)
	HILLSBOROUGH 171	2,507	5	5	9	–		–		–		–		–		–		–		–		13,000	8	(22)
	MANVILLE 190	2,209	6	7	8	(1,314)	14	–	10	(59)	14	(60)	14	(165)	11	–		(8)	8	217	1	18,600	4	–
	CORNING GLASS WORKS 198	2,122	7	2	10	211	1	2	3	10	1	7	5	14	3	5	2	14	4	53	2	26,300	3	3
	NORTEK 259	1,425	8	9	3	20	9	–		1	9	2	9	8	5	5	3	4	7	32	5	10,651	9	(11)
	NORTON 264	1,410	9	12	2	96	4	44	1	7	5	9	2	16	1	2	5	12	5	8	7	16,100	6	4
	LAFARGE 279	1,309	10	7	7	93	5	25	2	7	4	8	3	14	2	–		–		42	3	7,000	12	11
	CERTAINTEED 234	1,267	11	9	4	57	6	(8)	5	4	7	5	7	8	6	(1)	8	–		–		8,000	11	8
	NATIONAL GYPSUM 292	1,221	12	(12)	14	(80)	13	–		(7)	13	(5)	13	(103)	10	–		–		–		6,300	13	(33)

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																						
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
										SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
	ANCHOR GLASS 340	978	13	28	1	(9)	10	(143)	9	(1)	11	(1)	11	(11)	7	–		–		(48)	9	8,738	10	(12)
	CALMAT 422	655	14	9	5	56	8	(28)	6	9	3	7	4	12	4	2	6	14	3	8	8	3,294	15	2
	SOUTHDOWN 445	600	15	–		57	7	–		9	2	5	8	–		10	1	14	2	18	6	3,500	14	–
	TOTAL	28,633				(584)																234,983		
	MEDIAN	1,425		7		(57)		(18)		4		5		8		3		13		25		13,000		(9)
5	**CHEMICALS** 51 COMPANIES																							
	DU PONT (E.I.) DE NEMOURS 9	32,514	1	7	39	2,190	2	23	29	7	25	7	26	14	32	5	25	14	29	6	27	140,949	1	1
	DOW CHEMICAL 21	16,682	2	25	12	2,398	1	93	10	14	10	15	9	33	8	15	8	19	13	0	33	55,500	3	5
	UNION CARBIDE 50	8,324	3	20	17	662	3	185	5	8	21	8	23	36	6	9	16	20	12	24	10	43,902	6	2
	MONSANTO 51	8,293	4	9	37	591	4	36	22	7	24	7	29	16	28	7	19	19	15	2	31	45,635	5	(8)
	HANSON IND. NA 67	6,494	5	72	2	300	10	31	25	5	33	5	33	–		–		–		–		80,488	2	87
	GRACE (W.R.) 69	6,199	6	23	15	234	12	35	23	4	40	4	41	15	29	3	29	14	30	14	17	45,700	4	16
	HOECHST CELANESE 78	5,679	7	24	13	250	11	48	18	4	34	4	42	8	42	–		–		–		23,700	11	(2)
	PPG INDUSTRIES 79	5,617	8	8	38	468	5	24	28	8	19	9	17	21	16	15	7	27	5	26	8	36,300	7	(1)
	BASF 93	5,000	9	15	26	149	22	14	33	3	44	5	35	13	34	–		–		–		21,770	13	4
	BAYER USA 99	4,719	10	12	32	124	26	1	38	3	46	3	46	9	40	–		–		–		25,868	9	7
	AMERICAN CYANAMID 101	4,592	11	10	35	306	9	11	35	7	26	7	30	15	30	6	18	19	17	16	16	35,501	8	4
	FMC 136	3,287	12	5	42	129	25	(28)	42	4	38	5	38	–		(2)	31	25	7	(5)	36	24,342	10	(2)
	QUANTUM CHEMICAL 139	3,235	13	22	16	383	6	52	17	12	12	13	11	–		16	6	27	4	50	4	11,034	21	1
	HERCULES 154	2,802	14	4	43	120	28	(85)	44	4	35	4	45	6	43	1	30	16	25	(1)	34	22,718	12	(2)
	ETHYL 158	2,718	15	58	5	231	13	19	30	8	18	4	40	20	17	14	9	28	3	19	13	10,400	22	4
	ROHM & HAAS 168	2,535	16	15	27	230	14	18	32	9	16	10	14	19	18	17	5	25	8	12	19	12,444	19	4
	GOODRICH (B.F.) 169	2,520	17	16	24	196	17	86	11	8	22	9	16	17	22	5	24	18	20	32	7	12,302	20	3
	AIR PRODS. & CHEM. 176	2,432	18	14	30	214	15	37	21	9	17	7	27	17	24	11	13	16	24	4	28	13,300	18	10
	ENGELHARD 180	2,351	19	(5)	47	64	39	(9)	39	3	45	5	39	8	41	–		–		(11)	38	8,300	25	24
	MORTON THIOKOL 183	2,316	20	17	23	145	23	5	36	6	27	8	24	14	33	12	10	18	18	(5)	37	20,400	14	4
	OLIN 185	2,308	21	20	18	98	35	26	26	4	37	5	34	14	31	6	23	16	23	26	9	16,400	16	16
	VALHI 188	2,252	22	63	4	86	37	671	1	4	39	4	44	28	10	(10)	33	17	21	34	6	16,150	17	37
	SHERWIN-WILLIAMS 209	1,950	23	(7)	48	101	33	5	37	5	30	8	22	17	23	38	1	29	2	7	26	16,607	15	4
	FREEPORT-MCMORAN 211	1,945	24	28	9	310	8	25	27	16	7	8	20	28	9	25	2	20	10	23	11	6,474	29	1
	HIMONT 230	1,711	25	47	7	373	7	[illegible]	15	22	3	20	6	27	11	–		–		18	14	3,600	39	29
	CABOT 232	1,677	26	18	21	60	40	110	9	4	41	4	43	10	39	4	27	18	19	20	12	5,155	34	1
	WITCO 242	1,586	27	11	33	92	36	45	19	6	29	8	21	16	27	8	17	20	11	9	23	7,601	26	(2)
	DOW CORNING 252	1,477	28	13	31	151	21	11	34	10	15	10	15	19	20	–		–		–		7,300	27	4
	INT'L MIN. & CHEM. 254	1,471	29	(10)	49	114	29	438	2	8	23	6	31	11	37	(2)	32	11	32	(17)	39	6,900	28	(43)
	INSPIRATION RESOURCES 270	1,366	30	10	36	42	41	69	14	3	43	5	36	10	38	–		–		2	32	4,200	38	(16)
	PENNWALT 291	1,226	31	2	44	179	20	241	4	15	8	19	7	79	3	12	11	19	14	139	1	5,000	35	(44)
	LUBRIZOL 312	1,117	32	10	34	140	24	72	13	13	11	14	10	21	15	6	21	9	33	13	18	4,781	36	(1)
	ARISTECH CHEMICAL 321	1,065	33	16	25	188	19	170	6	18	5	28	3	46	5	–		–		7	25	1,700	43	1
	GEORGIA GULF 324	1,061	34	50	6	194	18	137	7	18	4	42	2	76	4	–		–		43	5	1,367	45	38
	HANNA (M.A.) 330	1,019	35	122	1	83	38	129	8	8	20	9	19	18	21	6	22	3	34	52	3	9,360	23	8
	NALCO CHEMICAL 335	994	36	18	20	106	31	32	24	11	13	13	12	22	12	11	15	15	27	10	21	5,381	32	6
	GAF 342	961	37	15	28	100	34	(58)	43	10	14	7	28	16	26	12	12	27	6	4	29	4,638	37	0
	CF INDUSTRIES 345	958	38	18	19	–		–		–		–		–		–		–		–		1,512	44	6
	DEXTER 369	827	39	6	40	35	42	(17)	40	4	36	6	32	12	36	4	26	14	28	(2)	35	5,400	31	2
	VISTA CHEMICAL 375	781	40	28	10	113	30	–		14	9	22	4	81	2	–		–		12	20	1,700	43	5
	INSILCO 387	753	41	5	41	–		–		–		–		–		–		–		–		–		–
	STERLING CHEMICALS 403	699	42	69	3	213	16	350	3	30	1	72	1	235	1	–		–		–		927	47	–
	FULLER (H.B.) 408	685	43	15	29	21	46	(18)	41	3	42	5	37	12	35	11	14	21	9	(24)	40	5,200	33	13
	GREAT LAKES CHEMICAL 435	616	44	23	14	103	32	86	12	17	6	16	8	21	14	20	3	19	16	9	22	2,900	40	13
	SCHULMAN (A.) 449	598	45	29	8	28	44	40	20	5	32	11	13	19	19	19	4	34	1	16	15	1,209	46	8
	BORDEN CHEMICALS 472	553	46	–		121	27	–		22	2	20	5	33	7	–		–		–		700	48	–
	AVERY 479	532	47	(11)	50	(59)	48	–		(11)	48	(14)	48	(754)	45	–		–		–		2,760	41	4
	BIG THREE INDUSTRIES 483	525	48	1	45	–		–		–		–		–		–		–		–		–		–
	GROW GROUP 495	507	49	1	46	0	47	(97)	45	0	47	0	47	0	44	–		16	22	84	2	2,479	42	(29)
	NCH 499	501	50	17	22	30	43	53	16	6	28	9	18	17	25	7	20	15	26	8	24	8,962	24	3
	CHEMED 500	501	51	28	11	24	45	18	31	5	31	7	25	22	13	3	28	13	31	3	30	5,556	30	15
	TOTAL	162,531				12,430																852,553		
	MEDIAN	1,677		16		135		35		7		8		17		8		18		11		8,631		4

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																						
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1978-88 annual growth rate %	Rank	1978-88 annual average %	Rank	1988 %	Rank	Number	Rank	% change from 1987
6	COMPUTERS (INCLUDES OFFICE EQUIPMENT) 26 COMPANIES																							
	IBM 4	59,681	1	10	19	5,806	1	10	12	10	7	8	10	15	13	6	8	10	9	10	6	387,112	1	(1)
	DIGITAL EQUIPMENT 30	11,475	2	22	11	1,306	2	15	11	11	4	13	4	17	11	19	4	14	8	(27)	21	121,500	2	10
	UNISYS 38	9,902	3	2	26	681	4	18	10	7	12	6	13	14	14	6	11	6	12	(14)	13	93,000	3	1
	HEWLETT-PACKARD 39	9,831	4	22	12	816	3	27	6	8	9	11	6	18	8	18	5	17	5	(8)	11	87,000	4	6
	NCR 72	5,990	5	6	25	439	5	5	14	7	10	9	8	20	5	6	10	16	6	(14)	14	60,000	5	(3)
	APPLE COMPUTER 114	4,071	6	53	5	400	6	84	2	10	6	19	1	40	1	–		–		(3)	9	10,800	13	40
	CONTROL DATA 125	3,628	7	8	23	2	22	(91)	20	0	22	0	22	0	22	(36)	15	2	14	(9)	12	33,500	7	(3)
	WANG LABORATORIES 145	3,068	8	8	22	93	12	–		3	17	3	18	6	18	12	7	9	10	(23)	19	31,516	8	4
	ZENITH ELECTRONICS 159	2,686	9	14	17	12	20	–		0	20	1	20	2	20	(10)	13	6	13	29	1	36,000	6	3
	PITNEY BOWES 162	2,665	10	18	14	243	8	22	8	9	8	5	16	19	7	14	6	26	3	14	3	29,316	10	(0)
	COMPAQ COMPUTER 202	2,066	11	69	2	255	7	87	1	12	3	16	2	31	2	–		–		8	7	6,500	22	63
	AMDAHL 226	1,802	12	20	13	223	9	53	5	12	2	12	5	22	4	4	12	7	11	15	2	8,300	17	11
	PRIME COMPUTER 241	1,595	13	66	4	19	18	(71)	18	1	19	1	19	4	19	6	9	15	7	13	5	12,386	12	40
	DATA GENERAL 272	1,365	14	7	24	(16)	24	–		(1)	24	(1)	24	(3)	23	–		(5)	15	(22)	18	15,420	11	(2)
	TANDEM COMPUTERS 278	1,315	15	27	9	94	11	(11)	15	7	11	7	11	11	17	28	2	23	4	(39)	23	8,624	15	23
	SEAGATE TECHNOLOGY 285	1,266	16	32	8	77	14	(45)	17	6	14	7	12	18	10	–		–		(42)	24	30,000	9	101
	SUN MICROSYSTEMS 327	1,052	17	96	1	66	15	83	3	6	13	9	9	18	9	–		–		(1)	8	7,100	20	69
	MEMOREX TELEX 358	890	18	8	21	(7)	23	(108)	21	(1)	23	0	23	–		–		–		–		6,186	23	(23)
	STORAGE TECHNOLOGY 362	874	19	17	16	44	16	70	4	5	15	5	15	16	12	(16)	14	(20)	16	(7)	10	8,498	16	(4)
	INTERGRAPH 372	800	20	25	10	88	13	26	7	11	5	[illegible]	7	13	15	–		–		(15)	16	7,300	19	16
	SCI SYSTEMS 374	774	21	40	7	19	19	19	9	2	18	4	17	13	16	28	3	29	2	13	4	8,970	14	35
	CRAY RESEARCH 385	756	22	10	20	157	10	6	13	21	1	16	3	23	3	42	1	29	1	(14)	15	5,237	24	22
	ATARI 400	705	23	43	6	(85)	26	(248)	22	(12)	25	(23)	26	(102)	25	–		–		(25)	20	1,780	26	(55)
	APOLLO COMPUTER 423	654	24	18	15	2	21	(90)	19	0	21	0	21	1	21	–		–		(30)	22	4,446	25	11
	XIDEX 427	637	25	11	18	(82)	25	–		(13)	26	(14)	25	(28)	24	–		–		–		7,425	18	5
	MINISCRIBE 444	603	26	66	3	26	17	(17)	16	4	16	5	14	20	6	–		–		(18)	17	6,648	21	34
	TOTAL	130,151				10,680																1,034,564		
	MEDIAN	1,480		19		83		13		6		6		15		6		12		(12)		9,885		8
7	ELECTRONICS 45 COMPANIES																							
	GENERAL ELECTRIC 5	49,414	1	26	11	3,386	1	16	22	7	12	3	33	18	14	11	16	19	9	5	21	298,000	1	(1)
	WESTINGHOUSE ELECTRIC 27	12,500	2	17	19	823	2	11	27	7	13	5	28	22	7	15	7	26	2	10	15	119,640	2	6
	MOTOROLA 52	8,250	3	23	13	445	6	44	8	5	19	7	19	13	27	10	17	14	20	(14)	37	102,000	3	4
	RAYTHEON 53	8,192	4	7	32	490	4	10	28	6	15	10	10	23	5	12	13	15	19	4	25	76,200	5	(0)
	HONEYWELL 60	7,148	5	7	31	(435)	44	(271)	37	(6)	44	(9)	43	(25)	42	–		9	30	15	11	78,383	4	(1)
	TRW 62	6,982	6	2	38	261	11	7	30	4	28	6	25	17	22	5	24	13	23	(9)	32	73,200	7	(6)
	EMERSON ELECTRIC 66	6,652	7	8	30	529	3	13	26	8	10	11	8	19	11	9	18	14	21	(9)	31	70,800	8	3
	TEXAS INSTRUMENTS 68	6,295	8	13	24	366	9	19	20	6	17	8	15	16	23	7	21	6	34	(25)	40	75,685	6	(3)
	NORTH AMERICAN PHILIPS 84	5,424	9	12	25	79	19	–		1	38	2	36	5	38	–		–		–		57,229	9	13
	WHIRLPOOL 104	4,421	10	6	35	94	17	(51)	35	2	35	3	34	7	33	0	30	15	17	6	18	29,110	13	(4)
	TELEDYNE 105	4,401	11	37	8	392	8	4	31	9	8	8	17	18	15	14	8	23	6	11	14	43,800	11	(1)
	COOPER INDUSTRIES 107	4,258	12	19	16	224	12	29	12	5	20	5	27	13	28	4	27	12	27	0	26	46,300	10	7
	WARNER COMM. 109	4,206	13	24	12	423	7	29	13	10	7	9	13	24	4	12	12	19	10	35	4	14,460	25	–
	INTEL 150	2,875	14	51	4	453	5	83	5	16	1	13	3	22	6	21	2	16	16	(10)	34	20,800	17	8
	AMP 161	2,670	15	15	21	319	10	28	14	12	2	13	2	21	8	13	10	18	13	(3)	27	24,100	14	10
	NAT'L SEMICONDUCTOR 173	2,470	16	32	9	63	24	–		3	31	4	30	6	35	2	28	8	32	(19)	38	37,700	12	29
	HARRIS 203	2,063	17	(1)	40	100	16	19	19	5	24	6	22	10	32	2	29	2	35	7	17	22,600	15	(7)
	MCDERMOTT 206	1,991	18	(3)	41	22	36	–		1	41	1	41	3	40	–		–		–		21,000	16	(5)
	MAYTAG 216	1,909	19	(0)	39	159	13	4	32	8	9	12	4	32	2	12	14	20	8	(9)	33	12,913	28	(1)
	GENERAL SIGNAL 227	1,760	20	10	29	25	33	(64)	36	1	39	2	37	5	37	(11)	34	10	29	5	20	19,[illegible]82	20	(0)
	SQUARE D 233	1,657	21	12	26	119	15	8	29	7	11	9	14	19	12	5	23	15	18	(5)	28	20,700	18	5
	RELIANCE ELECTRIC 246	1,552	22	10	27	24	34	500	1	2	37	2	39	18	16	–		–		–		1[illegible],339	21	3
	CHICAGO PACIFIC 250	1,500	23	6	34	–		–		–		–		–		–		–		162	1	–		–
	LORAL 256	1,441	24	109	1	74	21	29	11	5	22	5	26	17	20	16	5	18	12	4	23	13,700	26	65
	E-SYSTEMS 257	1,439	25	17	18	75	20	23	16	5	21	10	11	15	26	15	6	23	5	12	12	16,717	22	8
	NAT'L SERVICE IND. 260	1,414	26	7	33	86	18	14	25	6	14	10	9	15	24	12	15	25	3	5	22	20,400	19	5
	GENERAL INSTRUMENT 277	1,315	27	39	7	66	23	–		5	23	6	23	12	30	7	20	13	25	(13)	36	15,400	23	(6)
	VARIAN ASSOCIATES 305	1,171	28	19	14	28	31	30	10	2	32	3	32	6	36	5	25	17	14	16	9	11,800	30	(1)
	ADVANCED MICRO DEV. 311	1,126	29	13	23	19	38	–		2	36	2	38	3	41	(2)	31	14	22	(13)	35	14,817	24	(18)

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
										SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
	RAYCHEM 315	1,095	30	16	20	125	14	70	7	11	5	11	7	17	16	18	4	13	24	(21)	39	10,909	31	10
	ALLEGHENY INT'L 341	968	31	(30)	43	(25)	43	–		(3)	43	(3)	42	–		–		(17)	36	(41)	41	12,200	29	(5)
	MAGNETEK 352	910	32	49	5	20	37	301	2	2	34	3	31	60	1	–		–		–		13,250	27	6
	CHAMPION SPARK PLUG 374	785	33	(21)	42	24	35	24	15	3	29	4	29	7	34	(7)	33	9	31	18	7	8,300	33	(10)
	PITTWAY 377	771	34	19	15	37	28	15	23	5	25	6	20	11	31	8	22	16	15	30	5	7,800	34	(2)
	WESTERN DIGITAL 380	768	35	66	3	43	27	(10)	33	6	18	8	16	17	19	–		–		(9)	30	6,582	36	97
	AMETEK 402	701	36	13	22	31	29	(26)	34	4	27	7	18	17	21	4	26	18	11	4	24	5,200	38	(28)
	SSMC 414	668	37	–		(16)	42	–		(2)	42	–		–		–		–		16	10	24,100	14	–
	VALMONT INDUSTRIES 415	663	38	49	6	15	39	85	4	2	33	6	24	19	10	23	1	26	1	130	2	3,856	42	4
	LPL INVESTMENT GROUP 425	651	39	66	2	9	41	81	6	1	40	1	40	21	9	–		–		12	13	6,740	35	–
	HUBBELL 436	614	40	6	36	71	22	14	24	12	4	14	1	18	17	12	11	24	4	9	16	5,159	39	(1)
	FAIRCHILD INDUSTRIES 455	592	41	(34)	44	27	32	17	21	5	26	6	21	25	3	(4)	32	7	33	81	3	4,989	40	2
	SPRAGUE TECHNOLOGIES 487	517	42	10	28	13	40	267	3	3	30	3	35	4	39	–		–		26	6	8,500	32	2
	THOMAS & BETTS 489	515	43	18	17	58	26	21	19	11	6	12	5	19	13	8	19	12	26	(6)	29	4,700	41	12
	SCIENTIFIC-ATLANTA 492	509	44	3	37	30	30	22	[illegible]	6	16	9	12	13	29	14	9	10	28	18	8	3,445	43	3
	MOLEX 497	502	45	30	10	59	25	37	9	12	3	12	6	15	25	20	3	21	7	6	19	5,900	37	19
	TOTAL	167,722				9,232																1,505,505		
	MEDIAN	1,500		13		69		19		5		6		17		9		15		5		16,717		2
8	**FOOD** 48 COMPANIES																							
	OCCIDENTAL PETROLEUM 14	19,417	1	14	11	302	9	26	11	2	29	1	35	5	34	–		14	29	15	24	57,500	6	4
	RJR NABISCO 20	16,956	2	7	28	1,393	1	15	18	8	4	8	16	24	10	13	13	30	4	110	2	116,881	1	(3)
	SARA LEE 36	10,424	3	14	10	325	7	22	13	3	19	6	21	18	16	13	12	28	9	23	19	85,700	3	(7)
	CONAGRA 44	9,475	4	5	31	155	16	4	24	2	28	5	24	19	15	16	4	33	3	17	22	42,993	9	2
	BEATRICE 57	7,505	5	(16)	45	529	2	–		7	6	9	9	108	1	–		–		–		19,700	16	(68)
	BORDEN 59	7,244	6	11	16	312	8	17	17	4	15	7	18	17	17	11	16	27	10	23	18	46,300	8	18
	ARCHER DANIELS 65	6,798	7	18	5	353	6	33	7	5	12	8	15	13	26	16	5	20	22	4	31	9,006	25	(15)
	PILLSBURY 70	6,191	8	1	36	69	19	(62)	32	1	30	2	32	5	33	(2)	29	27	14	93	4	101,800	2	(3)
	RALSTON PURINA 71	6,176	9	5	32	388	4	(26)	29	6	7	10	8	36	4	15	8	26	16	31	13	56,734	5	(3)
	GENERAL MILLS 76	5,778	10	11	17	283	11	28	10	5	13	11	6	44	2	9	20	19	23	8	27	74,500	4	14
	QUAKER OATS 88	5,330	11	17	6	256	13	5	22	5	14	9	12	20	14	14	10	30	5	30	14	31,300	13	2
	HEINZ (H.J.) 89	5,244	12	13	12	386	5	14	19	7	5	11	5	24	8	15	6	26	15	19	21	38,000	11	(20)
	CAMPBELL SOUP 95	4,869	13	8	21	274	12	11	21	6	11	8	17	14	24	9	22	19	24	16	23	48,389	7	(2)
	CPC INTERNATIONAL 100	4,700	14	(4)	40	289	10	(19)	27	6	8	9	11	24	9	9	21	21	20	32	12	32,000	12	2
	KELLOGG 106	4,349	15	15	7	480	3	21	14	11	1	15	2	32	5	15	7	27	11	26	16	17,461	17	(2)
	WHITMAN 119	3,915	16	(15)	44	234	14	(7)	26	6	9	7	20	27	7	5	25	27	13	19	20	25,396	15	(24)
	AGWAY 124	3,644	17	12	14	–		–		–		–		–		–		–		–		16,851	18	(3)
	UNITED BRANDS 130	3,503	18	7	27	60	20	2	25	2	27	4	27	15	21	9	19	19	25	9	25	42,000	10	5
	SIPCO 141	3,225	19	(13)	43	11	32	–		0	36	3	30	–		–		–		–		5,403	32	(21)
	HERSHEY FOODS 167	2,561	20	5	33	214	15	44	4	8	3	12	4	21	13	17	3	27	12	9	26	12,100	22	(25)
	LAND O'LAKES 179	2,355	21	8	26	–		–		–		–		–		–		–		–		6,724	30	(5)
	HORMEL (GEO. A.) 186	2,293	22	(1)	37	60	21	31	9	3	21	9	14	14	25	12	15	26	17	5	30	7,994	26	(10)
	CENTRAL SOYA 193	2,189	23	44	1	11	31	31	8	1	33	2	34	6	31	–		–		–		3,360	38	5
	TYSON FOODS 212	1,936	24	8	22	81	18	20	15	4	16	9	10	24	11	20	1	38	1	34	10	26,000	14	3
	INT'L MULTIFOODS 231	1,698	25	11	18	33	26	(36)	30	2	24	4	28	9	27	2	27	15	28	8	28	9,048	24	5
	MID-AMERICA DAIRYMEN 235	1,655	26	10	19	–		–		–		–		–		–		–		–		4,000	37	5
	HOLLY FARMS 243	1,583	27	13	13	36	25	(49)	31	2	22	5	26	9	28	4	26	24	19	113	1	15,000	19	3
	DEAN FOODS 247	1,552	28	8	24	43	23	4	23	3	20	9	13	16	18	14	11	29	7	24	17	7,100	28	3
	WILSON FOODS 276	1,324	29	(2)	39	7	33	18	16	0	34	3	29	8	29	–		–		88	5	5,100	33	4
	MCCORMICK 300	1,184	30	10	20	43	24	40	6	4	18	6	22	15	23	9	18	18	27	57	7	7,626	27	2
	GERBER PRODUCTS 307	1,166	31	11	15	21	28	(26)	28	2	25	3	31	6	30	(2)	28	25	18	75	6	14,658	21	(8)
	AMSTAR 325	1,057	32	(24)	46	(6)	38	(124)	35	(1)	38	(1)	38	(9)	37	–		–		–		4,624	34	(12)
	GOLD KIST 328	1,044	33	(30)	47	–		–		–		–		–		–		–		–		9,100	23	(4)
	SAVANNAH FOODS & IND. 347	917	34	4	34	20	29	43	5	2	23	5	25	15	22	8	23	35	2	34	11	1,665	46	(11)
	SMITHFIELD FOODS 348	916	35	(12)	42	17	30	152	2	2	26	13	3	42	3	11	17	30	6	37	9	4,100	36	(13)
	AG PROCESSING 351	910	36	35	2	–		–		–		–		–		–		–		–		587	47	(0)
	WRIGLEY (WM. JR.) 357	891	37	14	8	87	17	24	12	10	2	20	1	28	6	12	14	18	26	8	29	5,500	31	–
	IBC HOLDINGS 365	855	38	14	9	(27)	39	(296)	36	(3)	39	(4)	39	(246)	38	–		–		–		14,700	20	30
	OCEAN SPRAY 382	767	39	6	29	–		–		–		–		–		–		–		–		1,940	44	3
	FLOWERS INDUSTRIES 392	738	40	(7)	41	43	22	56	3	6	10	10	7	22	12	15	9	28	8	1	32	9,100	23	(3)
	UNIVERSAL FOODS 396	720	41	1	35	28	27	11	20	4	17	7	19	18	20	6	24	20	21	106	3	4,433	35	15

INDUSTRY TABLE NUMBER / COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES: SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
									SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
	$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
FINEVEST FOODS 429	835	42	–		3	35	–		1	32	2	33	6	32	–		–		–		3,050	40	–
RICELAND FOODS 430	633	43	21	3	–		–		–		–		–		–		–		–		1,792	45	(0)
THORN APPLE VALLEY 452	593	44	(1)	38	5	34	415	1	1	31	5	23	16	19	19	2	–		–		2,630	41	8
SUN-DIAMOND GROWERS 471	554	45	6	30	–		–		–		–		–		–		–		–		2,500	42	2
AMER. MAIZE-PROD. 474	548	46	8	25	1	37	(89)	34	0	37	0	37	1	36	(16)	30	13	30	29	15	3,107	39	(7)
PRAIRIE FARMS DAIRY 490	512	47	8	23	–		–		–		–		–		–		–		–		2,000	43	–
PILGRIM'S PRIDE 496	506	48	20	4	2	36	(84)	33	0	35	1	36	2	35	–		–		52	8	6,800	29	26
TOTAL	169,033				6,822																1,060,252		
MEDIAN	1,817		8		60		15		3		7		16		11		26		25		9,048		(1)
9 FOREST PRODUCTS 33 COMPANIES																							
WEYERHAEUSER 37	10,004	1	43	1	564	2	26	21	6	26	4	32	14	29	3	24	9	25	2	24	46,976	2	18
INTERNATIONAL PAPER 42	9,5[illegible]	2	23	4	754	1	85	6	8	18	8	19	16	24	10	15	15	19	13	14	55,500	1	22
GEORGIA-PACIFIC 43	9,509	3	11	20	467	3	2	30	5	29	7	27	18	21	5	21	8	26	10	17	44,000	3	5
KIMBERLY-CLARK 85	5,394	4	10	21	379	6	16	25	7	22	9	15	20	15	11	13	25	5	20	9	38,328	5	3
CHAMPION INTERNATIONAL 91	5,129	5	11	19	456	4	19	24	9	16	7	25	14	30	4	22	8	27	(4)	29	30,400	6	(1)
JAMES RIVER 92	5,098	6	14	16	209	13	23	23	4	31	4	31	10	32	16	5	22	9	23	8	39,000	4	11
SCOTT PAPER 98	4,726	7	15	13	401	5	71	7	8	17	8	22	21	14	16	8	24	6	14	12	27,000	7	6
MEAD 103	4,464	8	6	26	353	7	62	10	8	19	10	11	23	8	8	19	18	13	17	10	21,000	8	2
BOISE CASCADE 112	4,095	9	7	25	289	12	58	11	7	21	8	17	17	22	8	18	15	21	4	22	19,835	10	(2)
STONE CONTAINER 122	3,742	10	16	9	342	8	112	4	9	15	14	6	32	2	–		35	1	32	3	20,700	9	10
GREAT NORTH. NEKOOSA 127	3,588	11	39	2	342	9	70	9	10	11	9	14	22	10	16	6	19	11	(15)	31	13,600	11	20
UNION CAMP 163	2,661	12	15	11	295	11	42	16	11	9	10	13	19	18	10	17	13	22	(2)	27	18,508	12	6
WESTVACO 197	2,134	13	12	18	200	14	37	18	9	13	8	18	15	27	10	14	19	12	8	19	14,750	14	1
TEMPLE-INLAND 200	2,099	14	31	3	199	15	41	17	9	12	6	28	18	20	–		–		0	25	11,000	18	(5)
LOUISIANA-PACIFIC 217	1,903	15	(1)	31	300	10	140	1	16	2	17	3	26	5	3	25	11	24	12	16	13,000	15	[illegible]
FORT HOWARD 219	1,859	16	6	27	–		–		–		–		–		–		–		–		–		–
WILLAMETTE INDUSTRIES 229	1,716	17	20	8	161	17	33	19	9	14	11	8	22	11	12	12	15	20	4	21	9,325	19	8
SONOCO PRODUCTS 240	1,600	18	22	5	96	23	57	13	6	25	10	12	21	12	16	7	31	2	65	1	14,859	13	5
AVERY INTERNATIONAL 244	1,582	19	8	24	78	26	124	2	5	28	7	24	15	26	14	9	23	8	9	18	11,500	17	(4)
BOWATER 262	1,410	20	15	14	164	16	103	5	12	7	9	16	20	16	–		–		(5)	30	5,000	24	–
ESSELTE BUSINESS SYS. 267	1,401	21	13	17	59	27	3	29	4	30	5	29	13	31	–		–		(4)	28	12,976	16	(1)
JEFFERSON SMURFIT 288	1,255	22	14	15	144	19	57	12	12	8	18	2	46	1	–		–		14	11	7,600	21	(3)
FEDERAL PAPER BOARD 313	1,117	23	9	23	143	20	118	3	13	6	11	9	22	9	–		17	15	5	20	5,300	23	(9)
POTLATCH 317	1,084	24	9	22	112	21	28	20	10	10	8	20	16	25	7	20	12	23	13	13	7,240	22	2
BEMIS 319	1,069	25	15	12	40	30	24	22	4	32	7	26	17	23	12	11	30	3	24	7	7,855	20	3
CONSOLIDATED PAPERS 355	897	26	21	6	150	18	56	14	17	1	16	4	21	13	13	10	23	7	26	5	4,454	26	2
DENNISON MFG. 394	722	27	2	30	37	31	8	28	5	27	7	23	15	28	4	23	15	18	(0)	26	7,600	21	3
CHESAPEAKE 399	711	28	5	28	52	28	71	8	7	20	8	21	18	19	19	2	17	14	24	6	4,215	27	8
GAYLORD CONTAINER 412	671	29	–		42	29	–		6	23	5	30	29	3	–		–		–		3,900	28	–
LONGVIEW FIBRE 421	657	30	15	[illegible]	96	22	48	15	15	4	15	5	27	4	17	4	17	16	56	2	3,450	29	3
GLATFELTER (P.H.) 461	569	31	–		82	25	–		14	5	12	7	24	6	18	3	30	4	27	4	3,439	30	–
TAMBRANDS 465	563	32	5	29	85	24	11	27	15	3	18	1	24	7	10	16	21	10	13	15	4,700	25	–
POPE & TALBOT 488	515	33	21	7	32	32	14	26	6	24	10	10	20	17	19	1	16	17	3	23	3,128	31	18
TOTAL	93,478				7,124																536,136		
MEDIAN	1,716		14		163		45		9		8		20		11		17		12		12,976		3
10 FURNITURE 8 COMPANIES																							
INTERCO 133	3,341	1	28	1	145	2	47	1	4	7	7	6	12	7	2	7	(C)	8	(66)	8	54,000	1	15
MASCO 175	2,439	2	21	4	288	1	32	5	12	1	10	4	19	2	14	3	20	5	19	3	27,000	2	–
LEGGETT & PLATT 371	810	3	25	2	38	4	1	7	5	6	8	5	15	5	12	4	21	4	11	4	10,600	3	8
MOHASCO 373	791	4	(2)	8	(18)	8	(242)	8	(2)	8	–		–		–		23	3	97	2	–		–
MILLER (HERMAN) 398	714	5	24	3	45	3	34	4	6	3	10	3	18	3	26	1	27	2	5	5	5,074	7	2
OHIO MATTRESS 417	662	6	11	6	33	7	42	3	5	5	6	7	13	6	20	2	36	1	107	1	5,555	5	0
HON INDUSTRIES 459	575	7	4	7	35	6	43	2	6	4	13	1	24	1	10	6	14	7	(5)	6	5,423	6	(12)
KIMBALL INTERNATIONAL 481	530	8	11	5	36	5	19	6	7	2	11	2	16	4	10	5	18	6	(11)	7	8,270	4	11
TOTAL	9,861				602																115,922		
MEDIAN	752		16		37		33		6		10		16		12		21		8		8,270		5
11 INDUSTRIAL AND FARM EQUIPMENT 33 COMPANIES																							
TENNECO 24	15,707	1	4	31	822	1	–		5	9	5	23	25	1	2	15	13	13	31	11	94,000	1	(10)

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																					
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1978-88 annual growth rate %	Rank	1978-88 annual average %	Rank	1988 %	Rank	Number	Rank	% change from 1987
	CATERPILLAR 35	10,435	2	28	7	616	2	76	4	6	6	6	8	15	11	(1)	20	4	24	4	26	60,558	2	11
	DEERE 87	5,365	3	30	4	315	3	–		6	7	6	12	13	16	0	18	7	20	40	5	38,268	3	1
	DRESSER INDUSTRIES 118	3,942	4	26	8	157	5	221	2	4	21	5	16	10	24	(1)	21	8	18	14	18	30,700	5	(0)
	CUMMINS ENGINE 135	3,310	5	20	14	(63)	32	(557)	26	(2)	32	(3)	32	(9)	31	–		11	15	42	4	26,100	7	7
	INGERSOLL-RAND 146	3,021	6	14	22	162	4	37	8	5	8	7	7	12	19	1	16	11	14	(1)	28	30,284	6	2
	BAKER HUGHES 184	2,316	7	20	12	103	8	–		4	14	5	21	11	23	(5)	23	2	28	6	24	21,492	9	1
	BLACK & DECKER 187	2,281	8	18	15	97	9	75	5	4	18	5	19	13	14	0	17	7	22	25	14	20,800	10	6
	PARKER HANNIFIN 189	2,252	9	20	13	107	7	25	14	5	12	6	10	13	17	5	10	14	12	(21)	33	33,300	4	21
	DOVER 208	1,954	10	23	10	146	6	31	11	7	2	11	2	20	6	13	6	21	5	(6)	30	20,412	11	16
	TRINOVA 214	1,919	11	14	23	88	11	17	16	5	13	6	9	13	15	3	13	18	8	(12)	32	23,251	8	12
	TIMKEN 245	1,554	12	26	9	66	13	539	1	4	19	4	25	7	27	(5)	24	8	19	20	17	18,050	12	8
	CRANE 255	1,452	13	13	25	62	14	5	18	4	17	9	3	23	4	10	8	17	9	36	7	10,892	17	(3)
	AM INTERNATIONAL 280	1,297	14	12	26	(20)	31	(263)	24	(2)	31	(3)	31	(12)	32	–		(13)	29	5	25	7,539	25	(37)
	CLARK EQUIPMENT 283	1,278	15	22	11	46	16	–		4	23	5	22	11	22	(8)	25	2	27	27	13	9,043	20	8
	YORK HOLDINGS 290	1,235	16	28	6	(73)	33	(363)	25	(6)	33	(7)	33	–		–		–		121	1	9,877	18	10
	FIGGIE INTERNATIONAL 295	1,200	17	17	16	62	15	25	13	5	10	6	11	17	9	15	5	27	3	23	15	17,400	13	6
	HARNISCHFEGER IND. 298	1,187	18	13	24	14	27	(37)	23	1	28	1	28	3	28	(13)	26	2	26	(10)	31	11,600	16	2
	TECUMSEH PRODUCTS 316	1,094	19	15	21	70	12	(2)	20	6	4	8	5	11	21	3	11	15	11	14	19	12,196	15	10
	FUQUA INDUSTRIES 336	993	20	29	5	93	10	47	6	9	1	8	4	23	2	23	1	34	2	6	23	15,000	14	36
	BRIGGS & STRATTON 350	914	21	16	19	30	22	14	17	3	24	6	14	10	25	(2)	22	7	21	12	20	9,827	19	14
	INTERLAKE 356	892	22	8	28	40	20	(27)	21	4	15	6	13	15	12	16	4	23	4	3	27	7,799	24	(0)
	CINCINNATI MILACRON 364	858	23	4	32	37	21	–		4	16	5	20	16	10	0	19	10	16	9	22	8,371	23	(10)
	PENTAIR 370	823	24	4	30	40	19	82	3	5	11	5	18	14	13	6	9	21	6	70	3	8,700	21	40
	PHILIPS INDUSTRIES 405	693	25	17	18	43	18	31	10	6	5	12	1	20	5	18	3	38	1	10	21	8,546	22	5
	IMO INDUSTRIES 407	687	26	87	1	28	23	41	7	4	20	4	26	10	26	–		–		34	9	7,500	26	–
	COLEMAN 419	658	27	10	27	24	24	28	12	4	22	6	15	12	20	3	12	15	10	31	10	6,000	29	3
	NACCO INDUSTRIES 434	616	28	34	3	45	17	32	9	7	3	5	17	18	7	18	2	19	7	35	8	6,530	28	119
	TORO 438	609	29	17	17	20	25	18	15	3	25	7	6	23	3	3	14	6	23	30	12	3,105	33	12
	ALLIED PRODUCTS 458	578	30	16	20	5	29	–		1	29	1	29	3	29	11	7	9	17	21	16	5,300	32	2
	JEPSON 467	560	31	6	29	13	28	(30)	22	2	27	4	24	17	8	–		–		76	2	5,475	30	(5)
	J.P. INDUSTRIES 475	547	32	42	2	15	26	0	19	3	26	3	27	12	18	–		–		(3)	29	6,976	27	20
	CAMERON IRON WORKS 498	502	33	3	33	(5)	30	–		(1)	30	(1)	30	(2)	30	–		3	25	37	6	5,362	31	17
	TOTAL	72,730				3,205																600,253		
	MEDIAN	1,200		17		45		25		4		5		13		3		11		20		10,892		6
12	**JEWELRY, SILVERWARE** 1 COMPANY																							
	JOSTENS 450	596	1	(7)	1	89	1	99	1	15	1	22	1	51	1	19	1	21	1	7	1	7,000	1	(12)
13	**LEATHER** N.A.																							
14	**METAL PRODUCTS** 17 COMPANIES																							
	TRIANGLE INDUSTRIES 111	4,104	1	(5)	15	(54)	16	(204)	14	(1)	14	(1)	15	(19)	14	–		–		–		23,000	4	(4)
	GILLETTE 128	3,581	2	13	7	269	1	17	9	7	3	9	4	–		12	5	24	3	25	6	29,600	2	(2)
	COMBUSTION ENGINEERING 131	3,484	3	6	12	(245)	17	(533)	15	(7)	17	(10)	17	(41)	16	–		10	11	(4)	13	28,832	3	5
	EMHART 155	2,763	4	13	8	127	3	19	8	5	9	5	11	13	8	4	9	17	9	13	8	32,991	1	9
	ILLINOIS TOOL WORKS 213	1,930	5	14	5	140	2	32	4	7	4	10	2	19	4	14	3	22	4	7	9	14,200	6	4
	STANLEY WORKS 215	1,909	6	8	10	103	5	19	7	5	6	7	7	15	6	7	8	18	6	14	7	18,988	5	(1)
	CROWN CORK & SEAL 221	1,834	7	7	11	93	6	6	10	5	7	9	5	14	7	9	6	17	10	32	4	12,567	7	2
	HARSCO 282	1,279	8	9	9	31	10	(51)	12	2	10	3	12	7	11	(3)	12	17	8	5	11	11,600	8	5
	BALL 318	1,073	9	2	14	51	9	(24)	11	5	8	6	10	12	10	8	7	22	5	(19)	15	7,100	12	3
	TYLER 334	996	10	(9)	17	21	11	75	2	2	12	6	8	41	1	0	10	10	13	52	3	5,800	13	(23)
	NEWELL 338	988	11	37	3	61	8	65	3	6	5	7	6	15	5	19	1	36	1	106	1	11,000	9	(8)
	HILLENBRAND IND. 359	884	12	22	4	70	7	21	6	8	2	9	3	20	3	16	2	27	2	25	5	8,000	10	13
	SNAP-ON TOOLS 366	855	13	13	6	113	4	28	5	13	1	17	1	22	2	13	4	18	7	3	12	7,114	11	2
	LONE STAR TECH. 406	688	14	67	1	(25)	14	–		(4)	15	(1)	13	(8)	12	–		–		(10)	14	2,902	16	(10)
	BUTLER MANUFACTURING 426	646	15	5	13	15	12	312	1	2	11	6	9	12	9	(2)	11	6	14	5	10	3,733	15	0
	BANNER INDUSTRIES 473	548	16	48	2	(7)	13	(169)	13	(1)	13	(1)	14	(8)	13	–		10	12	69	2	8,000	10	–
	ROBERTSON (H.H.) 494	508	17	(9)	16	(28)	15	–	16	(6)	16	(10)	16	(36)	15	–		(0)	15	(42)	16	5,193	14	(4)
	TOTAL	28,066				735																230,620		
	MEDIAN	1,073		9		51		18		5		6		13		9		17		10		11,300		1

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																							
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
										SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
15	**METALS** 25 COMPANIES																								
	ALUMINUM CO. OF AMER. 40	9,795	1	26	7	861	1	330	4	9	8	8	13	19	11	8	11	13	8	23	8	59,000	1	7
	LTV 56	7,526	2	(1)	24	(3,154)	25	(727)	20	(42)	25	(51)	25	–		–		(9)	19	(10)	19	43,700	2	(9)
	REYNOLDS METALS 80	5,567	3	30	6	482	3	120	9	9	9	10	8	24	6	11	7	18	5	15	12	29,700	4	9
	BETHLEHEM STEEL 82	5,489	4	19	10	403	5	131	8	7	10	9	11	23	8	0	12	5	15	39	5	32,900	3	(4)
	INLAND STEEL IND. 116	4,068	5	18	11	262	6	81	13	6	12	9	12	17	14	(1)	13	5	14	40	3	20,639	5	(0)
	AMAX 117	3,944	6	15	14	741	2	–	1	19	2	18	2	43	3	12	6	(2)	17	14	14	20,000	6	1
	ARMCO 140	3,227	7	10	17	145	9	24	17	5	16	5	17	16	15	(10)	17	(4)	18	(11)	20	19,500	7	(5)
	NATIONAL STEEL 165	2,599	8	8	22	88	13	85	12	3	19	5	18	13	18	–		–		–		11,219	11	(10)
	PHELPS DODGE 182	2,320	9	44	3	420	4	104	11	18	3	15	4	25	5	27	2	12	10	15	13	10,752	12	24
	ASARCO 207	1,988	10	47	2	207	8	(26)	19	10	4	9	10	16	16	11	8	9	13	(1)	17	8,500	14	12
	TYCO LABORATORIES 239	1,602	11	44	4	66	15	148	6	4	18	7	14	23	7	15	5	37	1	58	2	12,000	10	13
	PENN CENTRAL 248	1,547	12	9	19	103	12	186	5	7	11	4	19	6	23	–		19	3	16	10	16,900	8	8
	WEIRTON STEEL 268	1,384	13	4	23	75	14	(7)	18	5	15	10	7	26	4	–		–		–		8,000	15	(1)
	CYCLOPS INDUSTRIES 289	1,251	14	14	15	29	19	–		2	21	6	16	83	1	–		–		(7)	18	7,239	16	32
	ALLEGHENY LUDLUM 294	1,208	15	39	5	109	11	135	7	9	7	15	3	48	2	–		–		39	4	5,600	20	4
	WHEELING-PITTSBURGH 314	1,103	16	10	18	259	7	–		23	1	20	1	–		28	1	(1)	16	30	7	6,234	17	(4)
	NUCOR 333	1,061	17	25	8	109	10	117	10	10	5	12	5	21	9	15	4	22	2	22	9	5,100	21	11
	AMSTED INDUSTRIES 343	960	18	17	12	11	23	–		1	24	2	23	6	22	–		–		–		8,700	13	5
	WORTHINGTON IND. 354	904	19	10	16	56	17	33	15	6	13	11	6	20	10	15	3	18	4	38	6	6,100	19	5
	HANDY & HARMAN 418	658	20	8	20	10	24	27	16	1	23	2	21	8	19	(3)	14	12	11	14	15	6,154	18	(1)
	TEXAS INDUSTRIES 428	635	21	8	21	13	22	942	2	2	22	2	22	7	21	(4)	16	12	9	16	11	3,200	25	(5)
	MAGMA COPPER 439	607	22	50	1	56	16	–		9	6	6	15	14	17	–		–		–		4,170	22	(7)
	LUKENS 442	605	23	20	9	33	18	54	14	6	14	9	9	18	12	9	10	14	7	(14)	21	3,838	24	8
	CARPENTER TECHNOLOGY 469	556	24	16	13	24	20	442	3	4	17	4	20	8	20	(4)	15	11	12	12	16	3,891	23	3
	MAXXAM 485	519	25	–		17	21	–		3	20	0	24	17	13	10	9	17	6	205	1	12,700	9	–
	TOTAL	61,124				1,429																365,736		
	MEDIAN	1,384		16		88		110		6		8		18		10		12		16		8,700		3
16	**MINING, CRUDE-OIL PRODUCTION** 9 COMPANIES																								
	BURLINGTON RESOURCES 194	2,167	1	–		72	4	–		3	5	1	5	2	5	–		–		–		7,185	2	–
	CYPRUS MINERALS 275	1,327	2	67	1	170	1	550	1	13	2	10	2	14	4	–		–		35	1	7,399	1	40
	UNION TEXAS 310	1,137	3	(10)	6	109	3	95	2	10	4	6	3	40	1	–		–		32	2	1,855	7	6
	VULCAN MATERIALS 326	1,053	4	(1)	3	136	2	17	3	13	1	14	1	21	2	12	1	24	1	30	3	6,331	3	6
	LOUISIANA LAND & EXP. 395	721	5	(12)	7	(33)	8	(234)	6	(5)	8	(2)	8	(7)	8	–		10	3	(4)	7	620	9	(26)
	NERCO 416	662	6	5	2	67	5	11	4	10	3	6	4	17	3	–		–		5	5	2,370	4	6
	WESTMORELAND COAL 451	593	7	(4)	4	2	7	–		0	7	0	7	1	7	(1)	2	(4)	5	(18)	8	1,585	8	(17)
	MAXUS ENERGY 460	575	8	(53)	8	(132)	9	–		(23)	9	[illegible]	[illegible]	(633)	9	–		(1)	4	(1)	6	1,981	6	(8)
	MITCHELL ENERGY 466	562	9	(4)	5	9	6	4	5	2	6	0	6	2	6	(12)	3	11	2	13	4	2,250	5	(2)
	TOTAL	8,797				399																31,576		
	MEDIAN	721		(4)		67		14		3		1		2		(1)		10		9		2,250		2
17	**MOTOR VEHICLES AND PARTS** 24 COMPANIES																								
	GENERAL MOTORS 1	121,085	1	19	7	4,856	2	37	8	4	11	3	15	14	15	2	9	12	10	45	5	765,700	1	(6)
	FORD MOTOR 2	92,446	2	29	3	5,300	1	15	10	6	5	4	13	25	4	14	2	24	2	40	6	358,939	2	2
	CHRYSLER 7	35,473	3	35	2	1,050	3	(19)	17	3	15	2	18	14	14	–		23	3	21	11	145,507	3	19
	DANA 90	5,172	4	25	5	162	8	12	12	3	14	3	14	17	10	4	7	12	9	19	12	39,500	6	5
	EATON 108	4,237	5	5	18	212	6	6	13	5	8	7	5	18	8	5	6	18	7	9	13	44,500	5	24
	NAVISTAR INT'L 113	4,080	6	16	9	244	5	631	2	6	3	10	3	28	3	(18)	11	(16)	14	26	8	15,719	8	5
	BORG-WARNER 142	3,218	7	(9)	22	419	4	–		13	1	16	1	77	1	–		–		–		70,200	4	(4)
	PACCAR 143	3,112	8	28	4	176	7	56	7	6	6	6	7	19	7	7	4	27	1	51	3	13,709	12	29
	FRUEHAUF 196	2,143	9	(23)	23	(56)	22	–		(3)	22	(4)	22	–		–		–		(17)	17	15,300	9	(4)
	MACK TRUCKS 199	2,102	10	13	12	32	15	677	1	2	19	2	19	6	19	–		–		4	15	9,348	15	(1)
	MASCO INDUSTRIES 236	1,651	11	12	13	82	9	85	4	5	9	4	12	22	5	–		–		9	14	14,850	10	(1)
	ARVIN INDUSTRIES 271	1,365	12	(1)	19	4	20	(93)	19	0	20	0	20	1	20	(40)	12	17	8	4	16	16,866	7	2
	ECHLIN 281	1,294	13	18	8	62	10	36	9	5	10	6	9	10	17	6	5	11	11	22	10	14,700	11	9
	FEDERAL-MOGUL 302	1,177	14	9	15	42	13	1	15	4	12	5	10	12	16	2	8	19	5	48	4	13,500	13	(6)
	SMITH (A.O.) 322	1,063	15	6	17	19	17	3	14	2	18	2	17	6	18	(7)	10	6	12	25	9	11,500	14	4
	SPX 360	878	16	13	11	45	11	72	5	5	7	6	6	14	13	8	3	18	6	34	7	9,000	16	19

BY INDUSTRY

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER COMPANY 500 RANK	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
									SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
	$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
SHELLER-GLOBE 368	835	17	–		–		–		–		–		–		–		–		–		–		–
EAGLE-PICHER IND. 379	770	18	14	10	(466)	23	–	20	(60)	23	(80)	23	–		–		1	13	(34)	19	9,000	16	8
HARLEY-DAVIDSON 384	757	19	11	14	24	16	13	11	3	13	6	8	20	6	–		–		95	1	4,900	21	14
DANAHER 388	752	20	(6)	20	44	12	132	3	6	4	8	4	28	2	36	1	23	4	66	2	6,500	18	(18)
INT'L CONTROLS 401	704	21	(7)	21	(11)	21	–		(2)	21	(2)	21	(83)	21	–		–		–		3,250	22	–
HARVARD INDUSTRIES 410	680	22	22	6	14	18	(25)	18	2	17	4	11	17	9	–		–		–		8,200	17	1
UIS 468	560	23	8	16	36	14	64	6	6	2	11	2	14	11	–		–		–		6,100	19	–
SUDBURY 478	532	24	55	1	11	19	0	16	2	16	3	16	14	12	–		–		(29)	18	5,800	20	–
TOTAL	286,087				12,301																1,602,588		
MEDIAN	1,330		13		44		14		4		4		14		5		18		22		14,205		3

18 PETROLEUM REFINING 29 COMPANIES

COMPANY 500 RANK	Sales $ Mil.	Rank	% change from 1987	Rank	Profits $ Mil.	Rank	% change from 1987	Rank	Sales %	Rank	Assets %	Rank	Equity %	Rank	EPS %	Rank	1978-88 %	Rank	1988 %	Rank	Number	Rank	% change from 1987
EXXON 3	79,557	1	4	18	5,260	1	9	18	7	7	7	8	17	10	10	5	22	1	21	16	101,000	1	1
MOBIL 6	48,198	2	(6)	26	2,087	2	66	11	4	15	5	13	13	[illegible]	7	8	17	4	23	14	69,600	2	(42)
TEXACO 8	33,544	3	(2)	23	1,304	7	–		4	18	5	17	16	11	5	12	16	7	44	6	40,000	6	(20)
CHEVRON 11	25,196	4	(3)	24	1,768	4	76	7	7	6	5	15	12	18	5	13	13	11	22	15	53,675	4	4
AMOCO 12	21,150	5	5	16	2,063	3	52	13	10	3	7	9	15	13	8	6	16	6	14	20	53,423	5	14
SHELL OIL 13	21,070	6	1	20	1,239	8	1	20	6	9	5	18	8	20	–		–		–		32,432	8	(2)
ATLANTIC RICHFIELD 17	17,626	7	8	10	1,583	5	29	16	9	4	7	7	25	5	10	4	17	5	23	13	27,200	9	5
USX 23	15,792	8	14	5	756	9	245	4	5	13	4	19	13	16	(1)	18	9	20	2	23	58,778	3	10
PHILLIPS PETROLEUM 31	11,304	9	5	14	650	10	–	2	6	10	5	12	30	4	6	11	13	12	45	5	21,000	11	(7)
UNOCAL 47	8,853	10	5	17	480	11	165	5	5	11	5	16	22	6	7	9	14	10	38	7	18,235	13	1
SUN 48	8,612	11	(1)	22	7	26	(98)	22	0	26	0	26	0	26	(33)	22	14	9	(3)	24	21,300	10	(6)
COASTAL 54	8,187	12	10	8	157	13	39	14	2	24	2	24	12	19	8	7	21	3	34	9	19,000	12	7
ASHLAND OIL 55	7,753	13	13	6	224	12	68	9	3	22	5	14	20	7	4	15	13	13	19	17	37,600	7	(10)
AMERADA HESS 110	4,206	14	(12)	28	124	16	(46)	21	3	21	2	22	6	22	(1)	20	12	14	29	11	8,151	15	3
FARMLAND INDUSTRIES 153	2,805	15	9	9	–		–		–		–		–		–		–		–		5,800	17	4
KERR-MCGEE 157	2,743	16	5	15	110	18	36	15	4	16	4	20	8	21	0	17	8	21	8	21	7,771	16	1
AMERICAN PETROFINA 164	2,635	17	6	12	133	14	60	12	5	12	6	11	16	12	13	2	16	8	23	12	3,595	23	7
PENNZOIL 201	2,088	18	17	3	1,475	6	–	1	71	1	33	1	114	1	31	1	21	2	5	22	10,000	14	61
DIAMOND SHAMROCK R&M 224	1,804	19	–		54	20	–		3	20	6	10	15	14	–		–		80	1	4,000	22	–
MAPCO 225	1,802	20	14	4	117	17	8	19	6	8	9	5	19	8	6	10	11	16	15	18	5,032	20	3
MURPHY OIL 253	1,474	21	0	21	39	22	–		3	23	2	25	5	23	(1)	19	11	17	33	10	4,321	21	(7)
FARMERS UNION 287	1,259	22	11	7	–		–		–		–		–		–		–		–		2,791	24	(3)
CROWN CENTRAL 308	1,149	23	6	13	38	23	21	17	3	19	9	4	13	17	3	16	9	19	49	4	5,495	18	4
TOSCO 309	1,142	24	(4)	25	90	19	71	8	8	5	16	3	34	3	5	14	(5)	22	79	2	850	28	(1)
PACIFIC RESOURCES 361	877	25	(8)	27	40	21	552	3	5	14	8	6	17	9	12	3	11	15	37	8	953	27	6
QUAKER STATE 363	869	26	2	19	15	25	–		2	25	2	23	5	24	(7)	21	10	18	15	19	5,371	19	(15)
VALERO ENERGY 378	771	27	23	2	31	24	137	6	4	17	3	21	3	25	–		–		78	3	1,960	25	(1)
REXENE 397	[illegible]	28	39	1	130	15	66	10	18	2	25	2	59	2	–		–		–		1,293	26	(1)
NAT'L COOP. REFINERY 448	600	29	7	11	–		–		–		–		–		–		–		–		568	29	1
TOTAL	333,786				19,974																621,194		
MEDIAN	2,805		5		145		63		5		5		15		6		13		23		8,151		1

19 PHARMACEUTICALS 16 COMPANIES

COMPANY 500 RANK	Sales $ Mil.	Rank	% change from 1987	Rank	Profits $ Mil.	Rank	% change from 1987	Rank	Sales %	Rank	Assets %	Rank	Equity %	Rank	EPS %	Rank	1978-88 %	Rank	1988 %	Rank	Number	Rank	% change from 1987
JOHNSON & JOHNSON 45	9,000	1	12	5	974	2	17	7	11	11	14	8	28	7	13	5	16	14	16	8	81,300	1	4
BRISTOL-MYERS 73	5,973	2	11	8	829	4	17	8	14	8	16	4	23	9	14	4	22	3	13	9	35,200	6	3
MERCK 74	5,940	3	17	3	1,207	1	33	2	20	1	20	3	42	1	16	3	21	4	12	11	32,000	8	3
AMERICAN HOME PRODUCTS 81	5,501	4	9	13	932	3	10	14	17	4	20	2	31	4	11	8	17	11	20	6	44,964	2	2
PFIZER 86	5,385	5	9	12	791	5	15	12	15	7	10	12	18	12	12	7	17	12	29	3	40,900	4	0
ABBOTT LABORATORIES 94	4,937	6	13	4	752	7	19	4	15	6	16	5	31	5	18	2	22	2	2	14	38,751	5	2
SMITHKLINE BECKMAN 97	4,749	7	10	11	229	12	(60)	15	5	15	5	15	15	13	3	15	12	16	3	13	41,560	3	14
LILLY (ELI) 115	4,070	8	1	16	761	6	18	6	19	3	14	6	24	8	11	9	18	10	13	10	26,700	9	4
WARNER-LAMBERT 120	3,908	9	12	6	340	11	15	11	9	12	13	9	34	3	7	14	18	8	20	7	33,000	7	(1)
SCHERING-PLOUGH 147	2,969	10	10	9	390	9	23	3	13	9	11	10	23	10	7	13	19	6	24	5	22,400	10	3
UPJOHN 156	2,746	11	9	15	353	10	16	9	13	10	11	11	19	11	10	10	17	13	(2)	15	21,300	11	4
SQUIBB 166	2,586	12	20	2	425	8	19	5	16	5	14	7	30	6	13	6	21	5	11	12	18,077	12	8
RORER GROUP 329	1,042	13	12	7	62	14	14	13	6	14	4	16	14	14	8	11	18	9	82	1	8,394	13	13
ROBINS (A.H.) 346	934	14	9	14	58	15	–		6	13	5	14	–		8	12	14	15	26	4	6,464	14	1
MARION LABORATORIES 389	752	15	26	1	150	13	55	1	20	2	27	1	39	2	27	1	41	1	(17)	16	3,441	15	13
SHAKLEE 432	627	16	10	10	27	16	16	10	4	16	6	13	10	15	3	16	19	7	56	2	3,300	16	(30)

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER / COMPANY 500 RANK	SALES $ Mil.	Rank	% change from 1987	Rank	PROFITS $ Mil.	Rank	% change from 1987	Rank	PROFITS AS % OF SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	EARNINGS PER SHARE 1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1978-88 annual average %	Rank	1988 %	Rank	EMPLOYEES Number	Rank	% change from 1987
TOTAL	61,118		–		8,282		–		–		–		–		–		–		–		457,751		–
MEDIAN	3,989		10		408		17		14		13		24		11		18		15		29,350		3

20 PUBLISHING, PRINTING 22 COMPANIES

COMPANY 500 RANK	SALES $ Mil.	Rank	% change from 1987	Rank	PROFITS $ Mil.	Rank	% change from 1987	Rank	PROFITS AS % OF SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	EARNINGS PER SHARE 1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1978-88 annual average %	Rank	1988 %	Rank	EMPLOYEES Number	Rank	% change from 1987
TIME INC. 102	4,507	1	7	10	289	4	16	9	6	14	6	16	21	4	6	16	22	10	31	8	21,000	6	5
GANNETT 134	3,314	2	8	9	364	2	14	10	11	5	10	5	20	5	13	10	18	17	(6)	18	37,000	1	3
TIMES MIRROR 138	3,259	3	3	20	332	3	25	6	10	7	10	6	20	7	10	13	20	16	(6)	17	27,963	2	0
DONNELLY (R.R.) 149	2,878	4	16	4	205	8	(6)	16	7	11	9	8	16	12	13	8	21	14	9	11	24,500	3	11
TRIBUNE 181	2,335	5	8	8	210	7	49	2	9	9	7	12	18	11	–		–		(3)	15	14,500	9	4
KNIGHT-RIDDER 192	2,194	6	6	15	156	11	1	14	7	12	7	13	19	10	9	14	18	19	16	9	22,200	4	(7)
BERKSHIRE HATHAWAY 205	1,992	7	(8)	22	399	1	(70)	1	20	1	6	17	12	17	25	3	40	2	59	3	–		–
MCGRAW-HILL 223	1,818	8	4	19	186	9	13	11	10	6	11	4	20	6	12	12	22	11	33	7	16,255	8	2
NEW YORK TIMES 228	1,755	9	4	18	168	10	5	13	10	8	9	7	19	9	25	2	22	12	(12)	19	10,700	11	2
DOW JONES 238	1,603	10	22	3	228	6	12	12	14	3	11	3	20	8	17	5	21	13	1	14	9,086	12	1
WASHINGTON POST 269	1,368	11	4	17	269	5	44	3	20	2	19	1	31	1	21	4	26	6	14	10	6,300	16	(2)
SCRIPPS (E.W.) 293	1,214	12	6	14	70	13	18	8	6	15	5	18	11	18	–		–		–		11,400	10	(1)
DELUXE 296	1,196	13	26	2	143	12	(3)	15	12	4	18	2	25	2	17	6	25	7	6	12	16,628	7	8
AMERICAN GREETINGS 303	1,175	14	7	13	33	17	(47)	19	3	19	3	19	6	19	4	17	18	18	53	4	22,000	5	–
MACMILLAN 331	1,019	15	7	12	–		–		–		–		–		–		39	3	63	2	–		–
MEDIA GENERAL 386	756	16	6	16	9	20	(79)	20	1	20	1	20	3	20	(6)	18	24	8	(4)	16	7,903	13	(5)
MEREDITH 411	678	17	13	5	47	15	40	4	7	13	7	11	13	14	12	11	24	9	3	13	3,839	18	22
STANDARD REGISTER 413	669	18	1	21	38	17	(6)	17	6	16	9	9	13	15	27	1	29	5	(17)	20	6,355	15	1
COMM. CLEARING HOUSE 437	612	19	11	6	49	14	(6)	18	8	10	9	10	23	3	15	7	20	15	(21)	21	7,207	14	9
REYNOLDS & REYNOLDS 446	600	20	7	11	26	18	23	7	4	18	7	14	13	16	7	15	10	20	50	5	4,976	17	(13)
AFFILIATED PUBL. 477	534	21	9	7	(81)	21	(140)	21	(15)	21	(19)	21	(42)	21	–		47	1	33	6	3,020	20	3
BANTA (GEO.) 482	527	22	74	1	23	19	35	5	4	17	6	15	14	13	13	9	31	4	70	1	3,700	19	–
TOTAL	36,005				3,166																276,526		
MEDIAN	1,291		7		156		13		7		7		18		13		22		9		11,050		2

21 RUBBER PRODUCTS 11 COMPANIES

COMPANY 500 RANK	SALES $ Mil.	Rank	% change from 1987	Rank	PROFITS $ Mil.	Rank	% change from 1987	Rank	PROFITS AS % OF SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	EARNINGS PER SHARE 1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1978-88 annual average %	Rank	1988 %	Rank	EMPLOYEES Number	Rank	% change from 1987
GOODYEAR TIRE 32	10,810	1	7	9	350	1	(55)	10	3	8	4	10	17	4	7	5	19	5	(12)	10	114,161	1	(0)
JOHNSON CONTROLS 144	3,100	2	16	5	104	3	16	6	3	7	5	9	12	9	5	8	16	8	48	3	28,900	2	7
PREMARK INT'L 178	2,397	3	9	8	105	2	47	1	4	6	6	6	14	8	–		–		[illegible]		24,000	3	5
RUBBERMAID 297	1,194	4	16	3	99	4	17	5	8	2	13	2	19	2	16	3	28	3	3	8	7,962	6	15
ARMTEK 301	1,180	5	[illegible]	11	8	11	(59)	11	1	11	1	11	3	11	(4)	10	–		–		8,403	4	(25)
FERRO 332	1,009	6	16	4	47	6	47	2	5	5	8	5	16	6	6	7	16	7	51	2	8,100	5	2
COOPER TIRE & RUBBER 391	748	7	12	6	41	7	34	4	5	4	9	4	16	5	19	2	38	1	59	1	6,031	7	5
MILLIPORE 433	622	8	18	2	55	5	14	7	9	1	9	3	15	7	11	4	10	9	(6)	9	5,832	8	12
CARLISLE 462	567	9	5	10	17	9	(8)	9	3	9	5	8	9	10	4	9	23	4	25	7	4,322	10	(10)
CONSTAR INT'L 464	566	10	24	1	14	10	46	3	2	10	6	7	17	3	6	6	17	6	26	6	4,000	11	(26)
STANDARD PRODUCTS 493	508	11	9	7	34	8	8	8	7	3	13	1	23	1	25	1	32	2	37	5	5,800	9	1
TOTAL	22,701				874																217,511		
MEDIAN	1,009		12		47		16		4		6		16		7		19		31		7,962		2

22 SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT 17 COMPANIES

COMPANY 500 RANK	SALES $ Mil.	Rank	% change from 1987	Rank	PROFITS $ Mil.	Rank	% change from 1987	Rank	PROFITS AS % OF SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	EARNINGS PER SHARE 1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1978-88 annual average %	Rank	1988 %	Rank	EMPLOYEES Number	Rank	% change from 1987
EASTMAN KODAK 18	17,034	1	28	4	1,397	1	19	5	8	6	6	7	21	5	6	9	11	8	(4)	11	145,300	1	17
XEROX 22	16,441	2	59	1	388	3	(33)	10	2	11	1	12	7	11	(5)	10	7	11	9	6	113,245	2	14
MINNESOTA MINING 34	10,581	3	12	9	1,154	2	26	2	11	2	13	3	21	3	8	6	12	7	(0)	10	82,818	3	1
BAXTER INTERNATIONAL 64	6,861	4	10	10	388	3	17	6	6	7	5	9	10	10	7	7	7	10	(21)	15	64,000	4	4
LITTON INDUSTRIES 96	4,864	5	10	11	167	5	21	4	3	10	3	10	14	8	–		17	4	(0)	9	55,000	5	1
HENLEY GROUP 148	2,903	6	(17)	16	(47)	15	–		(2)	15	(2)	15	(3)	14	–		–		9	5	6,700	14	–
POLAROID 218	1,863	7	6	14	(23)	14	(119)	11	(1)	14	(1)	13	(2)	13	–		7	12	59	1	11,613	9	(15)
BECTON DICKINSON 220	1,847	8	17	6	162	6	9	9	[illegible]	5	8	6	17	6	11	4	15	6	4	8	20,600	7	4
PERKIN-ELMER 258	1,429	9	7	12	72	10	–		5	8	5	8	10	9	6	8	8	9	5	7	10,941	10	(23)
TEKTRONIX 261	1,412	10	1	15	(17)	13	(133)	12	(1)	13	(2)	14	(3)	15	–		0	14	(16)	13	16,085	8	(6)
EG&G 265	1,406	11	14	8	69	11	24	3	5	9	13	4	21	4	14	3	16	5	(12)	12	25,000	6	9
BAUSCH & LOMB 339	978	12	16	7	98	7	15	8	10	4	8	5	16	7	10	5	20	2	28	4	10,000	11	20
COOPER COS. 349	916	13	46	2	(207)	16	(499)	13	(23)	16	(18)	16	(456)	16	–		–		(36)	16	5,470	16	(42)
BARD (C.R.) 383	758	14	18	5	79	9	26	1	10	3	15	1	24	1	21	1	30	1	35	2	8,250	12	9

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER COMPANY 500 RANK	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
									SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
	$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
MEDTRONIC 424	653	15	30	3	87	8	17	7	13	1	14	2	22	2	19	2	19	3	(16)	14	5,875	15	19
BELL & HOWELL 447	600	16	(17)	17	–		–		–		–		–		–		–		–		–		–
FOXBORO 476	540	17	7	13	10	12	–		2	12	2	11	5	12	(11)	11	6	13	35	3	7,200	13	2
TOTAL	71,085				3,776																588,097		
MEDIAN	1,429		12		83		17		5		5		12		8		11		2		13,849		4
23 SOAPS, COSMETICS 10 COMPANIES																							
PROCTER & GAMBLE 15	19,336	1	14	3	1,020	1	212	2	5	5	7	6	16	6	7	6	12	6	6	5	77,000	1	5
UNILEVER U.S. 63	6,956	2	30	1	133	3	86	3	2	7	2	7	7	7	–		–		–		24,044	4	–
COLGATE-PALMOLIVE 83	5,484	3	(3)	10	318	2	488	1	6	4	10	4	28	1	8	5	17	4	24	2	24,700	3	(34)
AVON PRODUCTS 132	3,365	4	2	9	(405)	9	(354)	9	(12)	9	(16)	9	(168)	9	–		(2)	7	(19)	7	28,400	2	(18)
REVLON GROUP 172	2,477	5	3	8	–		–		–		–		–		–		–		–		–		–
CLOROX 286	1,260	6	12	6	133	4	26	5	11	2	11	3	19	4	12	3	25	3	17	3	4,800	7	7
INT'L FLAVORS 367	840	7	13	5	129	5	20	6	15	1	15	2	19	5	8	4	12	5	15	4	4,177	8	1
ALBERTO CULVER 443	605	8	18	2	27	7	48	4	4	6	9	5	20	3	24	1	34	1	79	1	4,900	6	7
FABERGE 453	593	9	13	4	2	8	(94)	8	0	8	0	8	(0)	8	–		–		–		10,200	5	55
NOXELL 484	522	10	7	7	51	6	17	7	10	3	15	1	21	2	17	2	29	2	(7)	6	2,249	9	9
TOTAL	41,436				1,407																180,470		
MEDIAN	1,868		12		129		26		5		9		19		10		17		15		10,200		6
24 TEXTILES 11 COMPANIES																							
ARMSTRONG WORLD IND. 160	2,680	1	13	2	163	1	8	6	6	2	8	2	16	3	12	4	21	5	12	6	25,941	3	8
BURLINGTON HOLDINGS 174	2,452	2	(25)	11	(24)	10	–		(1)	10	(1)	10	(25)	10	–		–		–		28,000	2	(36)
WEST POINT-PEPPERELL 195	2,151	3	4	7	84	2	18	3	4	4	3	8	11	6	5	8	25	4	74	1	41,200	1	30
SPRINGS INDUSTRIES 222	1,825	4	10	4	53	4	(5)	7	3	8	5	6	10	8	9	7	21	6	7	7	23,400	4	1
FIELDCREST CANNON 274	1,338	5	(4)	9	11	9	–		1	9	1	9	4	9	(10)	9	11	8	43	3	22,041	5	(6)
DWG 306	1,168	6	(4)	8	36	5	99	1	3	7	4	7	23	1	13	3	18	7	–		17,050	6	(1)
SHAW INDUSTRIES 344	958	7	38	1	34	6	18	2	4	6	6	5	22	2	20	1	34	1	49	2	10,400	8	59
UNITED MERCHANTS 393	723	8	(5)	10	(37)	11	–		(5)	11	(8)	11	(60)	11	–		(8)	9	(24)	9	6,500	10	(28)
DIXIE YARNS 441	606	9	4	6	21	8	(18)	8	4	5	6	4	11	7	10	6	–		18	5	7,700	9	(21)
GUILFORD MILLS 457	578	10	7	5	27	7	12	5	5	3	7	3	14	5	11	5	27	2	(3)	8	3,970	11	6
RUSSELL 480	531	11	11	3	54	3	16	4	10	1	10	1	16	4	14	2	26	3	32	4	12,650	7	25
TOTAL	15,011				422																198,852		
MEDIAN	1,168		4		34		14		4		5		11		11		21		18		17,050		1
25 TOBACCO 7 COMPANIES																							
PHILIP MORRIS 10	25,860	1	16	4	2,337	1	27	2	9	3	6	3	30	3	19	1	24	4	24	5	155,000	1	37
AMERICAN BRANDS 58	7,477	2	18	3	580	2	11	4	8	4	5	5	22	4	11	5	26	3	54	2	48,800	2	13
UNIVERSAL 177	2,414	3	15	5	61	5	8	5	3	5	6	4	17	6	12	4	20	5	11	6	20,000	4	43
LORILLARD 263	1,410	4	8	6	368	3	0	6	26	2	40	1	82	1	–		–		–		4,250	6	(9)
STANDARD COMMERCIAL 390	750	5	21	2	17	6	28	1	2	7	2	7	12	7	7	6	20	6	26	4	6,500	5	14
UST 440	607	6	7	7	162	4	24	3	27	1	27	2	36	2	18	2	29	2	56	1	3,284	7	(1)
DIBRELL BROTHERS 470	555	7	80	1	13	7	–		2	6	4	6	20	5	16	3	31	1	48	3	24,600	3	606
TOTAL	39,073				3,538																262,434		
MEDIAN	1,410		16		162		17		8		6		22		14		25		37		20,000		14
26 TOYS, SPORTING GOODS 2 COMPANIES																							
HASBRO 273	1,340	1	1	1	72	1	50	1	5	1	7	1	10	2	–		54	1	19	2	8,200	2	(1)
MATTEL 337	990	2	(3)	2	36	2	–		4	2	5	2	27	1	(7)	1	4	2	38	1	10,800	1	(15)
TOTAL	2,330				108																19,000		
27 TRANSPORTATION EQUIPMENT 6 COMPANIES																							
BRUNSWICK 137	3,282	1	6	4	193	1	14	4	6	1	9	2	20	1	23	1	31	1	17	4	28,500	1	0
OUTBOARD MARINE 237	1,605	2	25	2	78	2	26	2	5	2	7	3	13	3	10	3	18	4	45	2	12,903	2	11
FLEETWOOD ENTERPRISES 266	1,406	3	12	3	48	3	21	3	3	3	9	1	14	2	10	2	20	3	49	1	10,500	3	5
TRINITY INDUSTRIES 431	633	4	29	1	13	5	225	1	2	5	2	5	6	4	(2)	5	25	2	[illegible]	3	6,800	5	13
AVONDALE INDUSTRIES 454	592	5	(13)	5	4	6	(3)	5	1	6	1	6	2	5	–		–		–		8,500	4	–
MINSTAR 486	518	6	(41)	6	15	4	–		3	4	4	4	–		8	4	–		–		4,880	6	(35)
TOTAL	8,037				351																72,083		
MEDIAN	1,019		9		31		21		3		5		13		10		22		39		9,500		5

INDUSTRY MEDIANS

RETURN ON SALES

	1988	1987
PHARMACEUTICALS	13.5%	13.2%
FOREST PRODUCTS	8.7	6.5
BEVERAGES	8.0	7.0
TOBACCO	7.8	8.3
PUBLISHING, PRINTING	7.1	8.4
CHEMICALS	6.9	6.0
COMPUTERS (INCL. OFFICE EQUIP.)	6.2	8.2
METALS	6.2	4.3
FURNITURE	5.6	5.2
SOAPS, COSMETICS	5.3	4.9
ELECTRONICS	5.1	5.0
SCIENTIFIC AND PHOTO. EQUIP.	5.0	8.3
PETROLEUM REFINING	4.7	3.4
METAL PRODUCTS	4.6	5.4
BUILDING MATERIALS	4.5	6.8
RUBBER PRODUCTS	4.4	5.6
APPAREL	4.3	3.9
INDUSTRIAL AND FARM EQUIP.	4.3	3.3
AEROSPACE	3.6	3.7
MOTOR VEHICLES AND PARTS	3.5	3.5
TEXTILES	3.5	4.1
MINING, CRUDE-OIL PRODUCTION	3.3	3.3
TRANSPORTATION EQUIPMENT	3.1	3.1
FOOD	2.8	3.5
THE 500 MEDIAN	5.5	5.1

RETURN ON ASSETS

	1988	1987
PHARMACEUTICALS	13.1%	12.2%
SOAPS, COSMETICS	8.9	6.7
FURNITURE	8.8	8.7
FOREST PRODUCTS	8.4	6.7
METALS	8.2	5.3
CHEMICALS	7.5	6.8
PUBLISHING, PRINTING	7.3	8.5
BEVERAGES	6.8	6.0
FOOD	6.7	6.5
RUBBER PRODUCTS	6.4	8.3
APPAREL	6.1	7.0
ELECTRONICS	6.1	6.6
TOBACCO	6.0	7.2
METAL PRODUCTS	5.8	7.9
COMPUTERS (INCL. OFFICE EQUIP.)	5.6	8.3
INDUSTRIAL AND FARM EQUIP.	5.4	5.4
TRANSPORTATION EQUIPMENT	5.4	7.4
PETROLEUM REFINING	5.3	3.1
BUILDING MATERIALS	4.9	7.4
SCIENTIFIC AND PHOTO. EQUIP.	4.9	7.8
AEROSPACE	4.9	5.0
TEXTILES	4.7	6.3
MOTOR VEHICLES AND PARTS	3.9	5.1
MINING, CRUDE-OIL PRODUCTION	1.3	2.8
THE 500 MEDIAN	6.8	6.6

RETURN ON STOCKHOLDERS' EQUITY

	1988	1987
PHARMACEUTICALS	23.6%	22.7%
BEVERAGES	22.8	14.0
TOBACCO	22.5	20.0
FOREST PRODUCTS	19.8	14.7
SOAPS, COSMETICS	18.5	16.2
METALS	18.4	11.1
PUBLISHING, PRINTING	17.7	18.9
APPAREL	17.5	14.1
CHEMICALS	16.8	14.2
ELECTRONICS	16.8	14.1
FURNITURE	15.9	15.2
RUBBER PRODUCTS	15.8	13.1
FOOD	15.7	16.1
PETROLEUM REFINING	15.3	10.2
COMPUTERS (INC. OFFICE EQUIP.)	14.7	14.6
MOTOR VEHICLES AND PARTS	14.5	11.6
TRANSPORTATION EQUIPMENT	13.4	23.1
INDUSTRIAL AND FARM EQUIP.	12.7	11.2
METAL PRODUCTS	12.7	14.3
SCIENTIFIC AND PHOTO. EQUIP.	12.1	16.3
AEROSPACE	11.4	11.3
TEXTILES	10.8	12.8
MINING, CRUDE-OIL PRODUCTION	2.4	7.0
BUILDING MATERIALS	−3.3	13.4
THE 500 MEDIAN	16.2	14.4

INDUSTRY MEDIANS

CHANGES IN SALES

INCREASES	
COMPUTERS (INCLUDES OFFICE EQUIPMENT)	19.1%
INDUSTRIAL AND FARM EQUIPMENT	16.9
METALS	16.2
TOBACCO	16.1
FURNITURE	15.8
CHEMICALS	15.7
FOREST PRODUCTS	13.8
MOTOR VEHICLES AND PARTS	13.2
ELECTRONICS	13.0
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	12.2
RUBBER PRODUCTS	12.4
SOAPS, COSMETICS	12.2
PHARMACEUTICALS	10.3
METAL PRODUCTS	9.4
TRANSPORTATION EQUIPMENT	9.0
BEVERAGES	8.9
APPAREL	8.7
FOOD	8.2
AEROSPACE	8.0
BUILDING MATERIALS	7.1
PUBLISHING, PRINTING	6.6
PETROLEUM REFINING	5.3
TEXTILES	4.5
DECREASES	
MINING, CRUDE-OIL PRODUCTION	4.1%

CHANGES IN PROFITS

INCREASES	
METALS	110.4%
PETROLEUM REFINING	62.7
FOREST PRODUCTS	45.0
CHEMICALS	35.0
FURNITURE	32.9
SOAPS, COSMETICS	26.4
INDUSTRIAL AND FARM EQUIPMENT	25.2
TRANSPORTATION EQUIPMENT	21.4
ELECTRONICS	18.9
METAL PRODUCTS	17.8
TOBACCO	17.4
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	17.2
PHARMACEUTICALS	16.8
BEVERAGES	16.5
RUBBER PRODUCTS	15.5
FOOD	14.6
TEXTILES	13.9
MINING, CRUDE-OIL PRODUCTION	13.8
MOTOR VEHICLES AND PARTS	13.7
COMPUTERS (INCLUDES OFFICE EQUIPMENT)	12.6
PUBLISHING, PRINTING	12.6
AEROSPACE	11.6
DECREASES	
BUILDING MATERIALS	17.7%
APPAREL	3.4

TOTAL RETURN TO INVESTORS, 1988

TRANSPORTATION EQUIPMENT	39.2%
TOBACCO	36.9
RUBBER PRODUCTS	31.3
TOYS, SPORTING GOODS	28.5
FOOD	24.9
BUILDING MATERIALS	24.9
APPAREL	24.1
PETROLEUM REFINING	22.9
MOTOR VEHICLES AND PARTS	22.2
BEVERAGES	21.2
INDUSTRIAL AND FARM EQUIPMENT	20.3
AEROSPACE	19.5
TEXTILES	18.4
METALS	16.0
SOAPS, COSMETICS	15.0
PHARMACEUTICALS	14.7
FOREST PRODUCTS	12.0
CHEMICALS	11.0
METAL PRODUCTS	9.9
MINING, CRUDE-OIL PRODUCTION	9.2
PUBLISHING, PRINTING	8.6
FURNITURE	8.0
JEWELRY, SILVERWARE	6.9
ELECTRONICS	4.8
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	1.6
COMPUTERS (INCLUDES OFFICE EQUIP.)	−11.5
THE 500 MEDIAN	14.1

INDUSTRY MEDIANS

TOTAL RETURN TO INVESTORS 1978-88 ANNUAL AVERAGE

TOYS, SPORTING GOODS	29.1%
FOOD	26.4
TOBACCO	25.0
APPAREL	22.8
TRANSPORTATION EQUIPMENT	22.3
PUBLISHING, PRINTING	22.1
JEWELRY, SILVERWARE	21.5
TEXTILES	21.3
FURNITURE	20.7
BEVERAGES	20.7
RUBBER PRODUCTS	18.8
CHEMICALS	18.3
PHARMACEUTICALS	17.9
MOTOR VEHICLES AND PARTS	17.7
FOREST PRODUCTS	17.4
SOAPS, COSMETICS	17.2
METAL PRODUCTS	16.9
ELECTRONICS	14.8
AEROSPACE	14.4
PETROLEUM REFINING	13.3
BUILDING MATERIALS	12.7
COMPUTERS (INCLUDES OFFICE EQUIP.)	11.9
METALS	11.6
INDUSTRIAL AND FARM EQUIPMENT	11.3
SCIENTIFIC AND PHOTO. EQUIP.	11.2
MINING, CRUDE-OIL PRODUCTION	10.4
THE 500 MEDIAN	17.5

SALES PER DOLLAR OF STOCKHOLDERS' EQUITY

FOOD	$5.33
TOYS, SPORTING GOODS	4.74
MOTOR VEHICLES AND PARTS	3.96
APPAREL	3.90
AEROSPACE	3.64
SOAPS, COSMETICS	3.45
RUBBER PRODUCTS	3.42
JEWELRY, SILVERWARE	3.39
TEXTILES	3.37
TOBACCO	3.37
PETROLEUM REFINING	3.07
METALS	3.06
TRANSPORTATION EQUIPMENT	2.96
INDUSTRIAL AND FARM EQUIPMENT	2.92
METAL PRODUCTS	2.83
FURNITURE	2.67
ELECTRONICS	2.60
CHEMICALS	2.46
COMPUTERS (INCLUDES OFFICE EQUIP.)	2.38
FOREST PRODUCTS	2.38
BEVERAGES	2.35
BUILDING MATERIALS	2.17
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	2.14
PUBLISHING, PRINTING	2.11
PHARMACEUTICALS	1.91
MINING, CRUDE-OIL PRODUCTION	1.66
THE 500 MEDIAN	2.93

SALES PER EMPLOYEE

PETROLEUM REFINING	$469,418
MINING, CRUDE-OIL PRODUCTION	290,207
SOAPS, COSMETICS	222,037
CHEMICALS	204,845
BEVERAGES	203,017
FOOD	197,963
METALS	172,213
FOREST PRODUCTS	168,728
BUILDING MATERIALS	158,329
TOBACCO	153,215
PHARMACEUTICALS	132,117
TOYS, SPORTING GOODS	127,557
RUBBER PRODUCTS	124,031
METAL PRODUCTS	120,835
PUBLISHING, PRINTING	117,024
AEROSPACE	112,228
MOTOR VEHICLES AND PARTS	111,211
TRANSPORTATION EQUIPMENT	110,673
SCIENTIFIC AND PHOTO. EQUIP.	109,203
COMPUTERS (INCL. OFFICE EQUIP.)	108,959
INDUSTRIAL AND FARM EQUIPMENT	102,367
ELECTRONICS	95,107
FURNITURE	90,319
JEWELRY, SILVERWARE	85,094
TEXTILES	78,756
APPAREL	56,356
THE 500 MEDIAN	137,888

INDUSTRY TOTALS RANKED BY SIX MEASURES

	SALES		PROFITS		ASSETS		STOCKHOLDERS' EQUITY		MARKET VALUE		EMPLOYEES	
	$ MIL	RANK	$ MIL	RANK	$ MIL	RANK	$ MIL	RANK	$ MIL	RANK	NUMBER	RANK
PETROLEUM REFINING	333,786	1	19,974	1	338,960	2	131,136	1	184,771	1	621,194	7
MOTOR VEHICLES AND PARTS	286,087	2	12,301	3	384,819	1	72,464	2	68,323	7	1,602,588	1
FOOD	169,033	3	6,822	8	110,267	6	37,589	7	94,233	6	1,060,252	4
ELECTRONICS	167,722	4	9,232	5	211,339	3	59,321	5	117,851	4	1,505,505	2
CHEMICALS	162,531	5	12,430	2	151,751	4	61,204	4	104,816	5	852,553	6
COMPUTERS (INCL. OFFICE EQUIP.)	130,151	6	10,680	4	136,485	5	71,307	3	129,985	3	1,034,564	5
AEROSPACE	125,226	7	4,896	9	97,836	7	31,106	8	45,010	11	1,149,643	3
FOREST PRODUCTS	93,478	8	7,124	7	92,881	8	39,043	6	58,244	8	536,136	10
INDUSTRIAL AND FARM EQUIPMENT	72,730	9	3,205	13	64,804	10	23,741	11	38,108	13	600,253	8
SCIENTIFIC AND PHOTO. EQUIP.	71,085	10	3,776	10	85,734	9	29,821	10	56,353	9	588,097	9
METALS	61,124	11	1,429	15	58,027	12	15,888	14	26,222	15	365,736	12
PHARMACEUTICALS	61,118	12	8,282	6	61,591	11	29,911	9	136,616	2	457,751	11
SOAPS, COSMETICS	41,436	13	1,407	16	31,041	16	11,638	16	24,281	16	180,470	20
BEVERAGES	39,441	14	3,244	12	40,331	15	17,167	13	43,615	12	344,034	13
TOBACCO	39,073	15	3,538	11	52,476	13	11,672	15	36,484	14	262,434	15
PUBLISHING, PRINTING	36,005	16	3,166	14	41,065	14	18,797	12	53,007	10	276,526	14
BUILDING MATERIALS	28,633	17	(584)	26	26,162	18	3,699	22	8,639	20	234,983	16
METAL PRODUCTS	28,068	18	735	18	27,062	17	6,612	18	16,841	17	230,620	17
RUBBER PRODUCTS	22,701	19	874	17	16,074	20	5,741	19	9,715	19	217,511	18
TEXTILES	15,011	20	422	21	12,043	21	3,827	21	6,271	22	198,852	19
FURNITURE	9,861	21	602	19	7,035	22	3,925	20	6,595	21	115,922	22
APPAREL	9,075	22	457	20	6,910	23	2,623	23	5,551	23	142,696	21
MINING, CRUDE-OIL PRODUCTION	8,797	23	399	22	16,767	19	6,644	17	13,584	18	31,576	24
TRANSPORTATION EQUIPMENT	8,037	24	351	23	5,119	24	2,113	24	3,600	24	72,083	23
TOYS, SPORTING GOODS	2,330	25	108	24	1,805	25	834	25	1,471	25	19,000	25
JEWELRY, SILVERWARE	596	26	89	25	407	26	176	26	689	26	7,000	26
TOTAL	2,023,135		114,960		2,078,812		698,000		1,290,873		12,707,979	

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TEXAS INSTRUMENTS	68
TEXTRON	61
THOMAS & BETTS	489
THORN APPLE VALLEY	452
TIME INC.	102
TIMES MIRROR	138
TIMKEN	245
TORO	438
TOSCO	309
TRIANGLE INDUSTRIES	111
TRIBUNE	181
TRINITY INDUSTRIES	431
TRINOVA	214
TRW	62
TYCO LABORATORIES	239
TYLER	334
TYSON FOODS	212
U	
UIS	468
UNILEVER U.S.	63
UNION CAMP	163
UNION CARBIDE	50
UNION TEXAS	310
UNISYS	38
UNITED BRANDS	130
UNITED MERCHANTS & MFRS.	393
UNITED TECHNOLOGIES	16
UNIVERSAL	177
UNIVERSAL FOODS	396
UNOCAL	47
UPJOHN	156
USG	152
UST	440
USX	23
V	
VALERO ENERGY	378
VALHI	188
VALMONT INDUSTRIES	415
VARIAN ASSOCIATES	305
VF	170
VISTA CHEMICAL	375
VULCAN MATERIALS	326
W	
WANG LABORATORIES	145
WARNACO	420
WARNER COMMUNICATIONS	109
WARNER-LAMBERT	120
WASHINGTON POST	269
WEIRTON STEEL	268
WESTERN DIGITAL	380
WESTINGHOUSE ELECTRIC	27
WESTMORELAND COAL	451
WEST POINT-PEPPERELL	195
WESTVACO	197
WEYERHAEUSER	37
WHEELING-PITTSBURGH	314
WHIRLPOOL	104
WHITMAN	119
WILLAMETTE INDUSTRIES	229
WILSON FOODS	276
WITCO	242
WORTHINGTON INDUSTRIES	354
WRIGLEY (WM. JR.)	357
X	
XEROX	22
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Z	
ZENITH ELECTRONICS	159

MIGRATORY HABITS OF THE 500

The Northeast used to have a hammerlock on headquarters of the largest industrial companies. No more. Here's where they're flying and why. Tomorrow . . . Duluth? ■ *by Alan Farnham*

INDUSTRIAL corporations once seemed as immovable as mountains. Their baggage—factories, forests, slag heaps, dams—weighs in tons. Yet they move. Of a morning, a CEO inhales a lungful of fresh air and says, "Well, Mother, we've been here long enough. Get the vice presidents dressed, and I'll gas up the car." Such corporate migrations are increasing. In a recent poll by this magazine, 73% of FORTUNE 500 chief executives said they had relocated some facilities in the past five years, and 81% expected to relocate facilities in the future. One in seven said he planned to move home base itself.

The map on the opposite page shows the FORTUNE 500's present whereabouts. The darker a state's color, the more headquarters it harbors. Inset numbers show how many headquarters each state has now and how many it had ten years ago. Gains and losses (see table) are the result of many factors besides physical relocation: mergers, acquisitions, industry cycles, regional booms and busts. Alabama's three arrivals, for example, aren't migrants at all, but native companies that grew.

From many causes, one result is clear: The Northeast's hold on corporate headquarters is weakening, with New York suffering the biggest losses. Since 1960 New York's share of the 500 has fallen by more than half. It's as if an unseen hand had hiked the upper-right-hand corner of the corporate billiard table, sending New York's balls rolling south and west to find new homes.

Texas has gained more headquarters than any other state. Says Philip D. Restifo, managing director of Manhattan's Galbreath Co., a relocation adviser: "In Houston you can rent prime office space for $11 a square foot that would cost you $45 in Manhattan. You can buy a great house for $150,000 that would cost $850,000 in New Canaan." He believes Texas-size lobbying has also been persuasive. "The development people are all over New Yorkers to persuade them to move," he says. "If you're interested, the mayor of Houston will be in your office in 24 hours." When J.C. Penney succumbed to such blandishments and relocated its Manhattan headquarters to Plano, Texas, in 1988, it found it could save $60 million to $70 million a year in administrative costs.

BIGGEST WINNERS	
Texas	+12
Virginia	+10
Georgia	+8

BIGGEST LOSERS	
New York	−37
Wisconsin	−6
North Carolina	−5

Headquarters shifts, 1978-88

Starting from a far smaller base than Texas, Virginia has gained nearly as many headquarters. Hugh Keogh, director of the state's department of economic development, believes proximity to Washington, D.C., helps. A corporate sales tax of 6%—unchanged for the past 17 years—hasn't hurt either.

Georgia, too, has done well. George Berry, commissioner of the state's department of industry and trade, claims Atlanta's "hassle factor" is lower than New York City's or Chicago's. Air-conditioning has increased Atlanta's attractiveness "tremendously," he says. Finally there's the clincher: golf in January. According to FORTUNE's relocation poll, CEOs say south Atlantic states, including Georgia, are their first choice for where to relocate company facilities.

Technology makes relocation to remote locations more feasible. With the latest advances in telecommunications, a CEO can run his company from the moon—or Minnesota. Airplanes link him to his most far-flung customers or suppliers. With the exception of good pastrami and certain banking services, he can get in Duluth pretty much everything he used to get in New York City.

At the same time, with the pool of workers growing more slowly than the number of jobs, employers have to compete for new hires. Some do it by touting "quality of life" incentives. This trend, combined with a corporation's need to cut costs, whipsaws cities like New York, where living costs are high and no number of Tintorettos in museums can make up for the smell of armpits in a hot subway car.

To Restifo the solution seems obvious: New York industrials should head for cheaper, more agreeable cities. "What's in an industrial's headquarters besides a lot of overhead and some top executives?" he asks. "The few who need to see bankers or lawyers or rub elbows with other executives at '21' can keep apartments in the city." And the rest? Hello, South Dakota. "No compa-

REPORTER ASSOCIATE *Alicia Hills Moore*

ny is going to pay $50 a foot so a bunch of accountants can go to the Metropolitan Museum on their lunch break," he adds.

Luckily for corporations that would like to maintain a New York presence, one's headquarters can be anything one says it is. Take Borden. The company has 1,200 people in Columbus, Ohio, where offices rent for $20 a square foot. Its headquarters, however, is technically 277 Park Avenue in New York City, where space costs $60. To save money, Borden's headquarters-à-terre consists of 25 people, including secretaries.

A study by William H. Whyte, author of the book *City* and a former FORTUNE editor, finds a striking relationship between CEO residences and corporate relocations. Of 38 industrials that left New York City during a ten-year period, 31 moved closer to their chief's home, dropping the average CEO commute to eight miles.

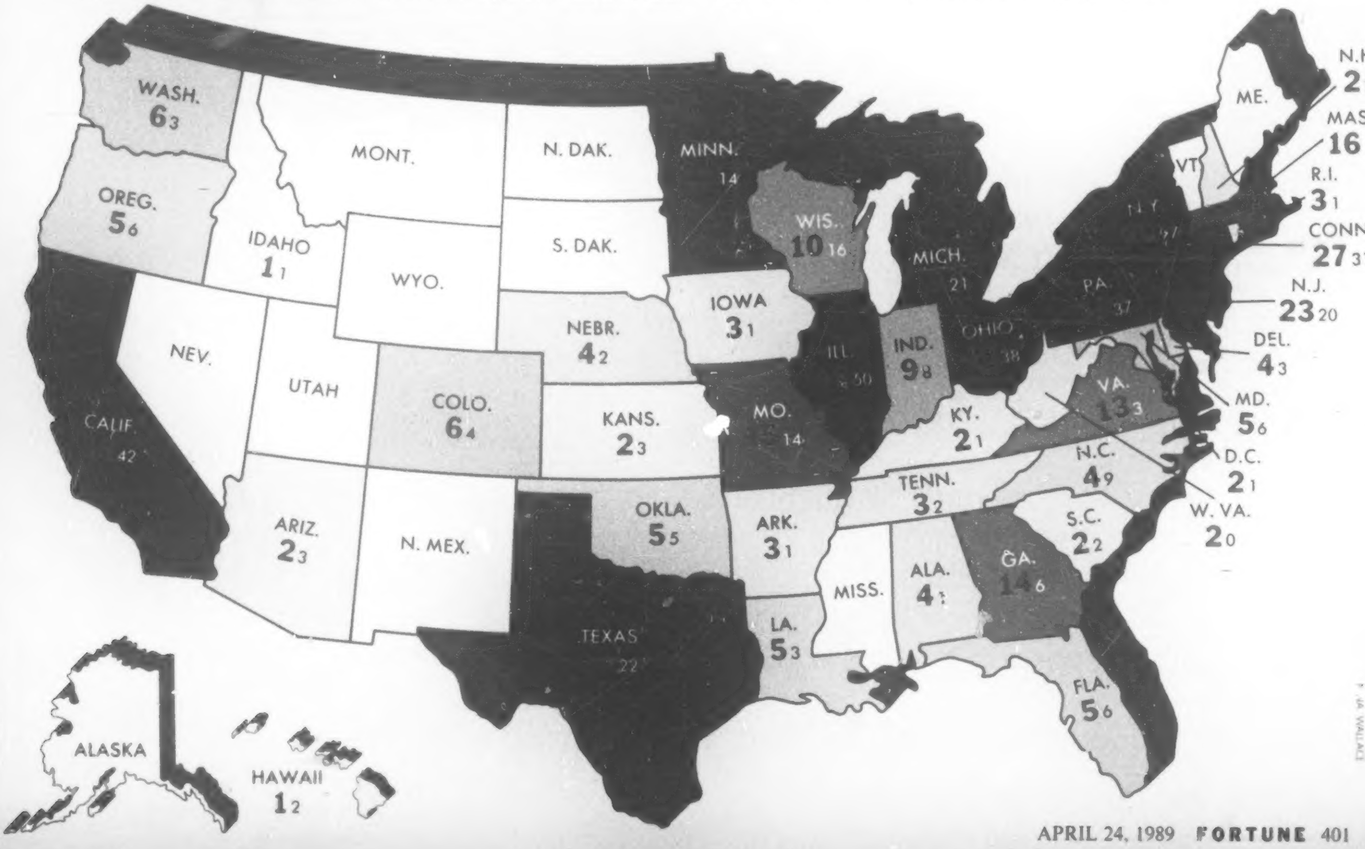
The flight of corporate headquarters may be mostly symbolic. So argues Rolf Wegenke, administrator of Wisconsin's division of business development. When Kimberly-Clark moved its headquarters from Wisconsin to Las Colinas, Texas, in 1985, "we lost 18 jobs," says Wegenke. "The important question isn't 'Where's headquarters?' It's 'Where are the jobs?' " He has a point. Since 1985 Kimberly-Clark has added 500 jobs in Wisconsin.

WHAT OF the future? Ford Harding, a relocation expert with PHH Fantus Corp., a provider of corporate relocation services, predicts that Georgia and Texas will continue to make gains. As they do, will the corporate presence in cities like New York waste away? Don Palmer, a Stanford business school professor, and Roger Friedland, his University of California at Santa Barbara colleague, argue it will not.

As conventional business information becomes easier to obtain, they say, the value of reliable, high-level gossip rises. For security reasons, such gossip must be traded face to face, rather than through notes, electronic mail, or answering machines, which can leave a trail. Where better to exchange business gossip than in the clubs and private meeting places of a great city? Whyte recalls one CEO who lost touch with gossip dens because his company left New York City. If only he had stayed plugged in, he might have heard the rumor that his company was about to be taken over. As it was, the news came as a nasty shock. F

GEOGRAPHIC DISTRIBUTION OF THE FORTUNE 500

The map below is color-coded to show which states the largest industrial corporations call home. The more headquarters a state has, the darker its color. Red numbers tell each state's catch; smaller figures tell how many each had ten years ago.


WASH. 6 3
OREG. 5 6
CALIF. 42
IDAHO 1 1
NEV.
MONT.
WYO.
UTAH
ARIZ. 2 3
COLO. 6 4
N. MEX.
N. DAK.
S. DAK.
NEBR. 4 2
KANS. 2 3
OKLA. 5 5
TEXAS 22
MINN. 14
IOWA 3 1
MO. 14
ARK. 3 1
LA. 5 3
WIS. 10 16
ILL. 50
MISS.
MICH. 21
IND. 9 8
KY. 2 1
TENN. 3 2
ALA. 4
OHIO 38
GA. 14 6
FLA. 5 6
PA. 37
N.Y.
VA. 13 3
N.C. 4 9
S.C. 2 2
ME.
VT.
N.H. 2 2
MASS. 16 13
R.I. 3 1
CONN. 27 31
N.J. 23 20
DEL. 4 3
MD. 5 6
D.C. 2 1
W. VA. 2 0
ALASKA
HAWAII 1 2